# NATURE MAGAZINE

VOL. 26, NO. 1 · 35c

JULY · 1935

TO STIMULATE PUBLIC INTEREST IN NATURE
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## THEY LIVE TODAY

Archibald Rutledge

## THE ALPINES OF MOUNT HOOD

Ira N. Gabrielson

## THREE MYTHS ABOUT LIGHTNING

Charles Fitzhugh Talman

## RECLAMATION VS. CONSERVATION

William L. Finley

## CONSERVATION

Phantom of the Mangroves

The Soil and Civilization

The Chief Forester Voices His Creed

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# NATURE MAGAZINE

PUBLISHED BY THE AMERICAN NATURE ASSOCIATION

To Stimulate Public Interest in Every Phase of Nature and the Out-Of-Doors, and Devoted to the Practical Conservation of the Great Natural Resources of America


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# Photographic Notes

BY SAMUEL BROWN

**The photographic section of NATURE MAGAZINE is designed to be of service to its readers interested in photography, in particular Nature photography. All are invited to submit any problems or questions, which will be handled with dispatch. Any suggestions with respect to the conduct of this department will be welcomed by the editor.**

TAKEN ON SUPER-SENSITIVE PANCHROMATIC FILM, F.16, 1/25 OF A SECOND EXPOSURE

During this and the coming months, opportunities to take landscape pictures will arise with more frequency that at any other time of the year. On our vacation we will wish to bring away a pictorial conception of the many interesting scenes we see.

A good landscape is a pictorial record, combining the essential qualities of good composition, tone values and subject matter.

The apparatus required is simple. While lenses of different focal lengths, several size cameras and tripods have their advantages for certain subjects, for general landscape work a reflex camera is best, so as to simplify planning the composition. This, supplemented by a telephoto lens (or suitable distar) and yellow filter, would be ideal. Folding and box cameras can also be used. One need only have an eye for interesting and beautiful scenery.

The importance of using Panchromatic film cannot be stressed too much. The rendition of natural colors in their corresponding tone values by these emulsions is so fine that there is no comparison with any other type of film.

Suitable subjects are available at every turn, but careful observation is necessary. One fault with beginners is that they try to include too much. Simple arrangements are to be preferred rather than a crowding of detail. Many landscape pictures have subject matter for two or more photographs with the result that the eye wanders confusedly from one point to another. Two important points to be remembered, therefore, are to leave out anything that does not add to the beauty of the composition and to take care in choosing the point of view.

Ordinarily a landscape picture should have one outstanding point of interest. All other points should be subordinated but help to support the dominant object.

Never divide a picture in half with a distinct vertical or horizontal line. When the horizon appears in the landscape, have it either one third from the top or bottom, depending on whether the foreground or sky is the most important point in the picture.

Roadways and streams should be taken from an angle and, if possible, it is best to include a curve. Curved lines are more beautiful than straight ones. Do not have the picture divided in half by the road or stream but have it enter from one of the lower corners and lead the eye *into* the picture.

Clouds should be included whenever possible. A broad expanse of plain white sky is uninteresting. The composition is much enhanced when the sky is broken up by clouds. These are best obtained with the use of a sky or yellow filter.

Landscapes are well lit and, therefore, require less exposure than other subjects. In bright sunlight, using *super-sensitive panchromatic* film, when a principal object appears in the foreground, an exposure of $\frac{1}{25}$ of a second at F. 16 is sufficient. Marine and beach scenes, without an object in the foreground, will be well exposed in $\frac{1}{25}$ of a second at F. 22. It is always desirable to take landscape pictures at a small diaphragm opening because this will give greater depth of focus. When a filter is used, the exposure must be multiplied by the factor of the particular filter in use. When a sky filter is used, no increase in exposure is necessary.

TAKEN ON SUPER-SENSITIVE PANCHROMATIC FILM, F.16, 1/25 OF A SECOND EXPOSURE

## Lens Speed

Users of single lens and box cameras often ask the question, "How fast is my lens?" Many cameras also, are marked 1, 2, 3 and 4 and the question arises, just what do these numbers mean? We wish definitely to clear up this matter in an understandable way.

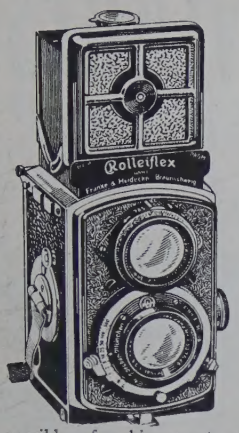
It is impractical to make a single lens faster than F. 11. F. 11, therefore, is the greatest possible speed on a single-lens, folding camera, this being indicated by the number 1 at the bottom of the shutter. The number 2 permits half as much light to enter the lens as number 1, and would, thereby, be rated as F. 16. Number 3 permits half as much light as 2, making that F. 22, and number 4 again half as much as 3 which would be rated as F. 32.

Box cameras, which have a slide with holes in it, which are brought in front of the lens as needed, follow in the same manner, the largest being F. 11, the middle size F. 16 and the smallest F. 22.

Cameras having no diaphragm adjustment may safely be assumed as having a rating between F. 11 and F. 16.

A simple, practical means for ascertaining definitely, the speed of any lens, is as follows: measure the distance from the middle of the lens to the back of the camera at the point where the film passes. This is the *focal length* of the lens. Now measure the

# Rolleiflex




REPRESENTING the ultimate advance in the construction of precision cameras, these instruments make it easy for you to capture the infinite beauties of nature. A high-speed focusing finder lens projects a sharply defined image in actual film size on the ground glass finder—a powerful magnifier aids you in obtaining ultra-sharp focus. You see exactly how your finished picture will look—you can gauge accurately its potential sharpness. A number of exclusive features, rigidly protected by patent rights, facilitate precise operation in a manner impossible of achievement with any other camera.

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diameter of the largest stop or diaphragm opening in front, back or center of the lens, as the case may be. By dividing the diameter of the diaphragm into the focal length of the lens, the correct F. number is arrived at. For example: if the focal length of the lens is 8 inches and the diameter of the largest stop is 1 inch, the greatest speed of the lens would be F. 8.

Comparative exposures for the more commonly indicated speeds, taking F. 11 as the unit, are as follows:

| F. No. | 4 | 6 | 8 | 11 | 16 | 22 | 32 |
|---|---|---|---|---|---|---|---|
| Exposure | 1/8 | 1/4 | 1/2 | 1 | 2 | 4 | 8 |

(This month we have started to give some notes on the technical side of photography. Let us know how you like this, and whether we shall continue with them. Some of the suggestions for articles in the future are as follows: stereoscopic and miniature photography and printing and developing. We would like your opinion.)

## "Trade Hints"

*Rolleiflex and Rolleicord owners attention! The Golden Book of the Rolleiflex* will be published this autumn! Owners of Rolleiflex and Rolleicord cameras are urged to submit their best efforts. Between $10.00 and $20.00 will be paid for every picture accepted. Several 8" x 10" enlargements should be submitted to Burleigh Brooks, 127 West 42 Street, New York, N. Y., before July 15, with all data marked.

* * *

Some very interesting literature concerning the Rolleiflex and Rolleicord cameras has just arrived. Those who are interested may obtain copies from this department.

* * *

From the Eastman Kodak Co., Rochester, N. Y., comes news of the Model K Cine-Kodak with the F. 1.9 lens. The price, which was formerly $152.00, has been reduced to $112.50 (without the carrying case). For this reason the model with the F. 3.5 lens has been discontinued, as the new price with the F. 1.9 lens is practically the same as the F. 3.5 model. Literature from the manufacturers.

* * *

The new "Bee-Bee Range Finder", selling at $4.20, is a real bargain. Anyone having difficulty in judging distances should be sure to inquire. Literature is available.

* * *

Two new pamphlets, entitled, separately, "How to Develop Roll Film, Cut Film

(Continued on page 4)


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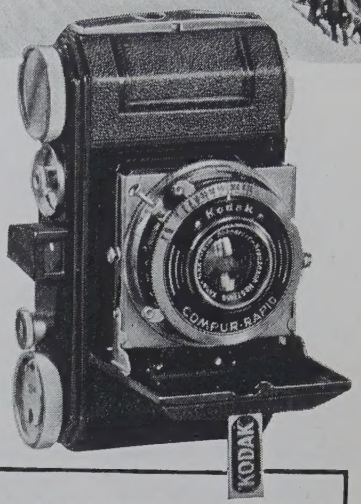


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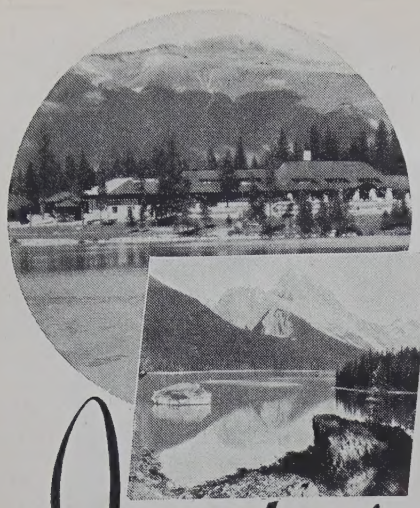

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and Film Packs" and "The Velox Book" are available. These give complete directions for developing and printing at home. Write for them, including a stamped, self-addressed envelope.

* * *

All who have any photographic problems or difficulties, or would like to have prints and negatives criticised are invited to correspond with this writer, who will give his personal and prompt attention to each inquiry. Address the department editor and enclose a stamped, self-addressed envelope for reply. We wish all of our readers to take advantage of this service.

Cordially, SAMUEL BROWN.

## Color Photography

Perfection of the Kodachrome process of color photography in motion pictures marks a significant step forward in the development of the photographic art and is the latest contribution of the Eastman Kodak Company to this field. The process has been worked out by Leopold Mannes and Leo Godowsky, Jr., eminent musicians, in collaboration with the extensive scientific staff at Kodak Park. The process is complicated so far as the preparation of the film is concerned but is simple so far as the use by the photographer goes. It is virtually as easy to take 16 mm. motion pictures in Kodachrome as it is black and white pictures. Thus far the film has been manufactured only for 16 mm. cameras, but as soon as equipment can be produced for larger size motion picture film it will also be brought out in that size. Full details may be obtained from Eastman Kodak stores.

## Nature Courses

Two outdoor courses in natural history will be given by the Division of General Education of New York University under the joint sponsorship of the American Museum of Natural History and the garden clubs of Long Island, New York. Headquarters of the course will be at Farmingdale, Long Island at the State Institute for Applied Agriculture. The dates of the courses are July 8 to 20 and July 22 to August 3. Full information may be obtained from Miss Farida A. Wiley, American Museum of Natural History, 77th and Central Park West, New York City.

## Bird Pictures

The third unit in the series of Natural History Pictures by Gayle Pickwell has just appeared and is devoted to bird studies. The splendid group of large-size, black and white pictures of birds is accompanied by a correlative textbook with a page devoted to the subject of each picture. This is further supplemented by a summary, by suggestive questions, a bibliography and other helpful references. The value of this series is re-emphasized with each new unit. It is brought out by the Publishers' Distributing Service, 704 South Spring Street, Los Angeles, California. The units, we understand, are not sold separately but as a part of a program.

## Photographic Exhibit

Details are being worked out for an International Exhibition of Nature Photography to be held at the British Museum, London, in October and November of this year. The program is under the direction of *Country Life*, Tavistock Street, Covent Garden, London, W.C.2.


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### Flicker Language

Evidence seems to be piling up that the flicker is the original telegrapher. On the heels of other observations that we have recorded in these pages, comes one from Emma Allen of Tacoma, Washington. She writes that "several times in the early morning hours I have been awakened by a sharp tapping on metal. One morning I located the sound as coming from the house across the street. Watching for a while I saw a flicker sitting on the apex of the roof calling loudly for several minutes. Then he ran rapidly down to the eaves trough and hammered it several times, stopping for a few seconds to listen before each attack upon the metal trough. Then he ran back to the top of the roof and called again. He repeated these actions until finally another flicker joined him on the roof and the two of them flew away. This took place several mornings."

### "Fossil" Museum

The kangaroo will lie down with the platypus and the teddy bear will play at the nest of the kookaburra in a huge enclosure that will house a unique collection of Australia's "living fossil" fauna at Melbourne, during the centenary celebrations, this year. Considerable trouble is being taken to scour the Commonwealth for the most complete set of native animals and birds that has ever been collected in one reserve. It is all being done for the benefit of visitors.

One of the most interesting features will be the "platypussery," which will house several of these freaks of Nature. The wedge-tailed eagle, the largest of its species in the world, also will be included, together with kangaroos, wallabies, bandicoots, wombats, Koala bears, frilled and monitor lizards, emus and many other queer specimens that have survived in Australia from prehistoric times.

### Eagle Teaching Unit

The latest addition to the splendid series of Conservation Teaching Units brought out by the Emergency Conservation Committee, 734 Lexington Avenue, New York City, is entitled *Eagles*. The objective of the unit is stated as: "(a) To gain a fair and truthful understanding of these large birds of prey; (b) To learn the characteristics of the bald eagle and the golden eagle; (c) To fully realize the unjust treatment of man to our National Bird." Let us hope that all three of these objectives will be attained, and the text provided for this unit by Ellsworth D. Lumley is calculated materially to contribute to that end. We wish that these Conservation Teaching Units might be added to the curriculum of every school in this country.

### School on Wheels

For three weeks during August, Dr. William Gould (Cap'n Bill) Vinal will conduct the Nature Guide School on Wheels on a 2600-mile trip through New York and New England. Travelling in a comfortable thirty-passenger bus, the twenty-five students will ferret out interesting Nature nooks and corners of the region visited, and Cap'n Bill knows them all. The trip is under the auspices of the summer session of Western Reserve University. Full details may be obtained from William Gould Vinal, Western Reserve University, Cleveland, Ohio.

### Recognizes Protection

By Royal Decree the Belgian Government has officially recognized the International Office for the Protection of Nature and has appointed Baron E. de Cartier de Marchienne and Count Henry Carton de Wiart as its official representatives on the Council.

# AWAY FROM THE HEAT AND HURRY OF THE CITY

Well-known to the city dweller is the recurrent longing for green fields and growing things. For the peace and comfort of a house by the side of a quiet road. Where the children may find greater health and safety. Where the air is fresh and clean and tall trees shade the day. The telephone has helped to make that dream come true for countless men and women.

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# In July

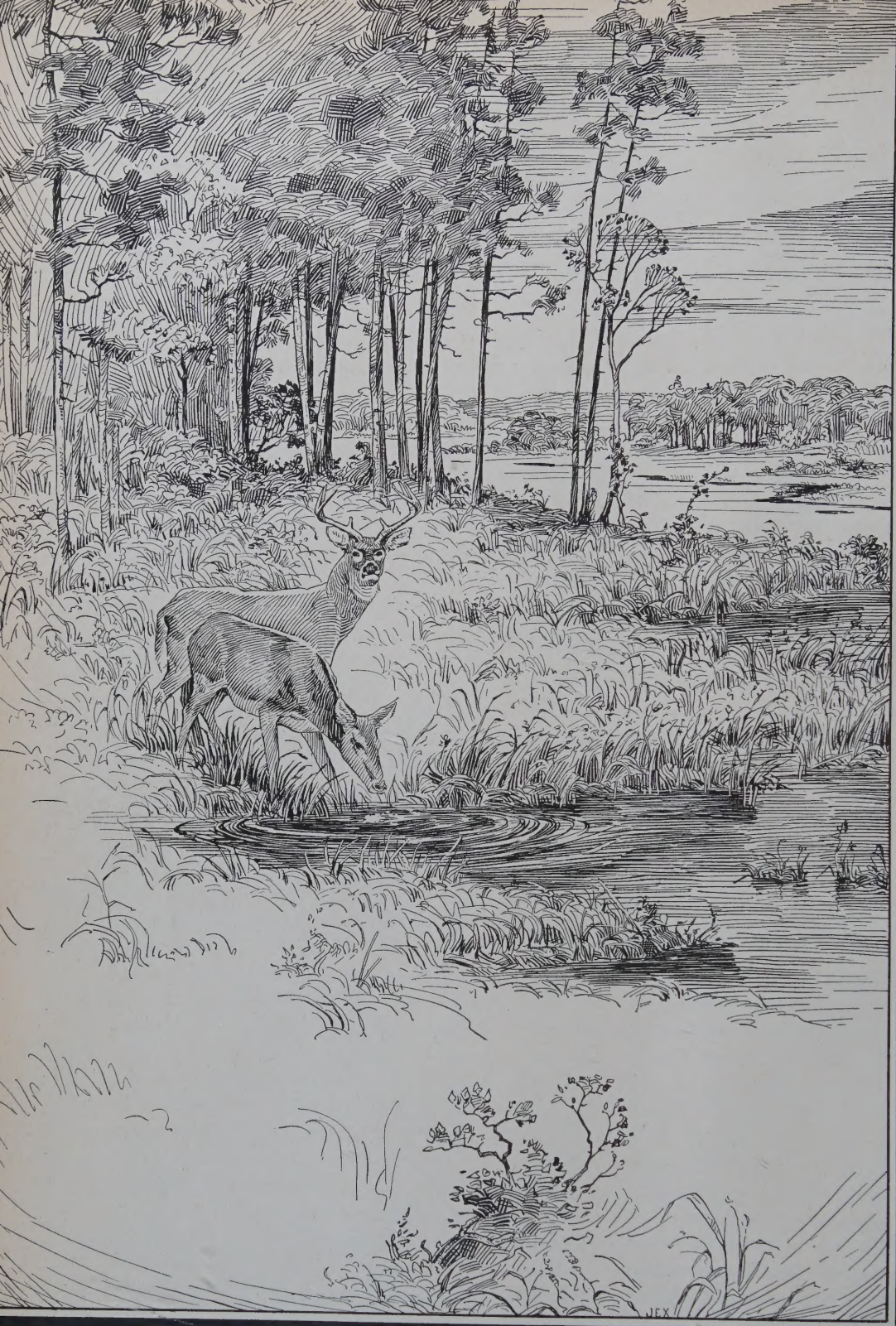
ALL SEASONS are periods of transition; and, indeed, the refreshing interest that the out-of-doors constantly affords those who live in the Temperate Zones is in a large measure the result of the perpetual order of change, establishing a sweeping rhythm that is always perceptible but never subject to hard and fast definition. So, in every July there is something of June and something of August, yet the month's thirty-one days are distinctive—characterized not by the explosive spirit of growth of the earlier months nor by the scorching heat of the August sun, but rather by the first fresh attainments of the year, and by a peacefulness.

Blooms are still at hand and, in fact, reaching their greatest glory. The brightness of the month is in the cardinal flower, the red lobelia, rising from marshy areas or from low places in meadows with such brilliance that it led Burroughs to write of color emanating from it "as from a live coal." The great or blue lobelia appears also in July, and the brook lobelia with a more delicate blue and a more graceful presence grows on the wet banks of streams, on wet rocky ledges, or also in swamps and in meadows with boggy areas. Most engagingly the chicory waves a fragile blue flower on a substantial stem from which a meadowlark can sing its song, and the air is fragrant with the aroma of clover blossoms. The early goldenrods are about in old fields. In fields and thickets, as well as in woods, the tall yellow wood sorrel lifts its flowers on erect stems or rests them pleasantly on surrounding vegetation, while in the high mountain forests, luxuriant now with ferns and upholstered with an abundance of mosses, the flowers of the pink-veined wood sorrel show themselves among the plants' beautiful leaves. The jewelweed, the pale touch-me-not, is flowering in moist places; the water lilies are in bloom; and the pickerel weed—native, aquatic, and attractive—shows its spire of blue flowers above its large and glossy green leaves. The red and yellow lilies, the flowers that according to Thoreau "make freckles beautiful", are blooming in July—the yellow lily in swamps, moist meadows, and fields and the red in thickets and dry woods. "The flowering season has reached its height," Thoreau thought when he saw these flowers. "Now," he declared, "I am prepared for anything."

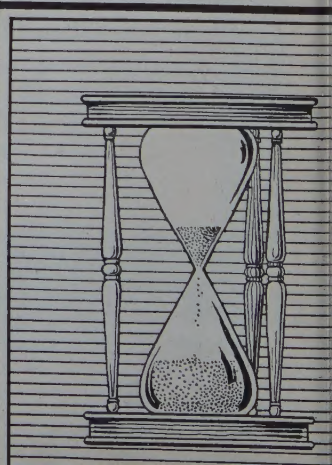
The first fruits of the blossoms of June are on the bushes of July, and it is the beginning of berrying time. Blackberries and raspberries are welcome morsels, not only for man but as well for the black bear and for other foragers of the wild. And so also are the blueberries and huckleberries—"they deserve to be celebrated," said Thoreau.

One who perchance finds himself on the way to a berry patch during the warmth of the day may enjoy the sight of a sluggishly moving wood tortoise, a quick-flitting indigo bunting, or the glistening skin of a black snake sunning itself. Under a flat stone or in the soft soil on some sunny bank the eggs of the black snake may be found. Nearby, solitary wasps may be industriously storing an underground chamber with paralyzed insects for the larvae soon to be hatched. The bobolinks, tree swallows, grackles, and red-winged blackbirds already may be seen in the flocks that are being formed as the breeding season is coming to an end for them, but the goldfinches that in June were flying care-free about in flocks are now busy nesting and feeding to their young the seeds for which they postponed their nesting. The berry-picker may also see young rabbits and young woodchucks that have not yet learned the shyness that will be theirs with only a few more weeks of experience.

Already in the year it is the time when early-morning and late-evening excursions are the most pleasant because of the sun that is growing more nearly uncomfortable at other hours. In the morning the jeweled wonder of a lawn or field adorned with the dewy webs of the common grass spider may delight one, and in the evening the fireflies over these same fields will amaze one with their numbers and with the wonder of their flickerings. With the coming of sundown bats begin to swoop through the air, these mammals taking up the expert insect destruction carried on through the daylight hours by the swallows, and the welcome July night may bring with it the vigorous, brisky call of a belated whip-poor-will.



"IT WAS NOT LONG BEFORE I SAW A BUCK AND DOE COME STEALING OUT OF A FRAGRANT THICKET OF GREENERY"



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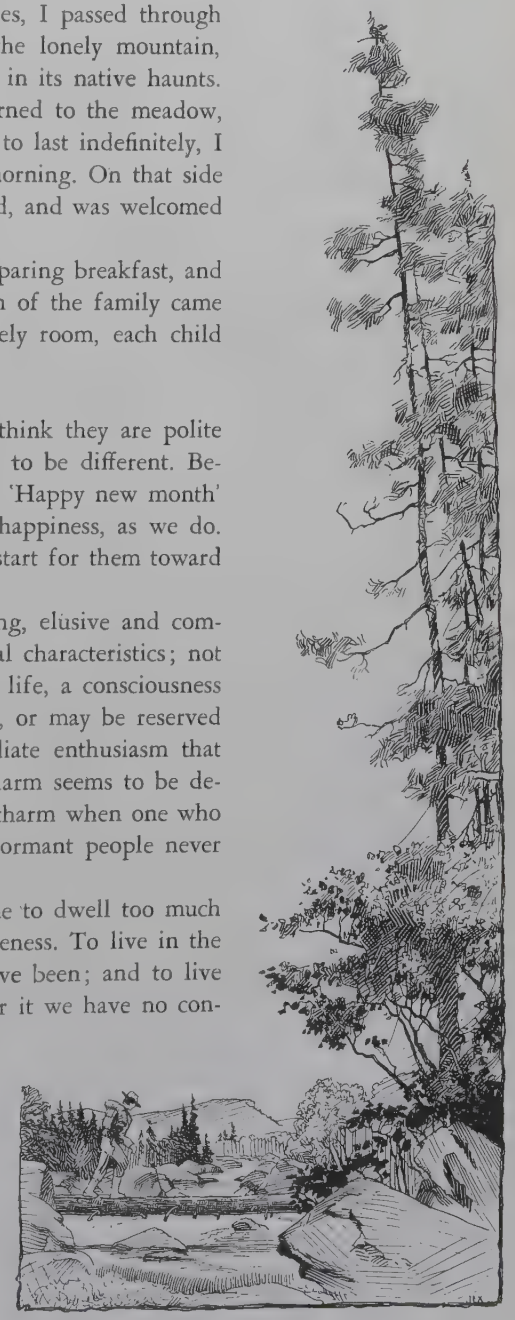
V.26

# They Live Today

*By* ARCHIBALD RUTLEDGE

*Illustrated by Jex*



CROSSING the creek on an old log, the only bridge within miles, I passed through a wild meadow, and then entered the fragrant silence of the lonely mountain, where I hoped to spend a happy day in studying wild game in its native haunts. But before noon, a heavy black rain had set in; and when I returned to the meadow, the creek was high over its banks. As the downpour seemed likely to last indefinitely, I knew that a recrossing of the stream would not be likely before morning. On that side of that unruly flood there was but one farmhouse. To this I repaired, and was welcomed for the night.

Next morning, while the mother in that mountain home was preparing breakfast, and the father and I stood talking before the fire, the six little children of the family came trooping irregularly downstairs. On entering the humble but homely room, each child cried, with a certain spontaneous ecstasy, "Happy new day!"

It gave me a great thrill.

"Some people," the father remarked, his blue eyes twinkling, "think they are polite when they snarl 'Goo' mornin' ' at you. I wanted these little ones to be different. Besides, what they say means more. They say 'Happy new week' and 'Happy new month' too. They don't wait a whole year to be happy, or to wish others happiness, as we do. I figure that wishing happiness for others every day means a good start for them toward their own."

What we call human charm is a very subtle and intangible thing, elusive and complex. It has always seemed to me that vitality is one of its essential characteristics; not so much a display of intense animal spirits as a keen awareness of life, a consciousness of the value of today. By disposition one may be gay and volatile, or may be reserved and quiet; yet each may manifest to an equal degree the immediate enthusiasm that suggests an appreciation of the value of the thing we call life. Charm seems to be determined by the way in which we take life; and there can exist no charm when one who has the high privilege of living takes it as a sentence of death. Dormant people never thrill us.

Thinking on this matter, I have come to believe that for any one to dwell too much on either the past or the future is almost fatal to personal attractiveness. To live in the past is almost surely to grieve for the joys that were or might have been; and to live in the future likely means to fear. So inviolate is the past that over it we have no control; in a deep sense, we have almost as little over the future. Only today is really ours; and because that is true, we should make everything of it. Don't charming people always seem to be living today as if it were the whole of life, and as if they intended to make the most of it and to make their friends enjoy it also? Yesterday sleeps; tomorrow sleeps; only today is awake, and we ought to be awake with it. "Happy new day!" is a great philosophy.

All this matter is a very human problem; and we often cast

about to see how such a matter is handled in the general course of nature; I mean, have the humbler orders of creation apparently solved this problem? If so, can we so imitate their behavior in a reasonable degree as to secure for our own lives that beauty of vitality that comes from an emancipation alike from the too haunting past and the too dreaded future?

Late one October afternoon I was deep in the pineland wilds of my plantation, intent on watching the game birds and animals that, at such a place and at such an hour, seem to take over for their own enjoyment the primeval forests which rightly belong to them. It was not long before I saw a buck and a doe come stealing out of a fragrant thicket of greenery. Such was the day that all nature had apparently conspired to afford them an idyllic setting for their romantic tryst: the great yellow pines quietly sang on their blue imperial thrones; Carolina wrens made the wildwoods ring with their crystal notes, that interpreted rather than startled the dreaming silence; hale spiceries, like those of Eden odorous in the early mist, breathed from the dark-green watercourses and the glimmering copses. The two deer were lovers, and they were alone.

"I NOTICED PARTICULARLY A PAIR OF CARDINALS"

While I was watching these wild children, thinking how perfectly they belonged to that setting, and with what shadowy glamour they adorned it, the stillness was rent by the terrific blare of a gun at close hand. A roaming pineland hunter had waylaid the deer and had shot at them. Judging by the way they ran, I could not see that he had touched them; but he had scared them almost to death. These hunted wild creatures have a very definite idea of the meaning of a gun; and through long years of observation I have come to a conviction that they understand the significance of death. We know that domestic animals recognize it and apparently appreciate its meaning. Wild creatures seem even more sensitive than are tame ones in its dread presence.

Well, these two deer vanished; but, knowing just about where they were going, I walked a wide arc in the sunset woods, and a half-mile away came upon them quietly feeding, returned to joy and security in their beautiful dim haunt. What made me think was their swift recovery of joy and serenity. It was not that they had not known the degree of their peril; it was not that they had forgotten their danger. But the mere life of the moment meant so much to them that they chose to forget what was past, and likewise they refused to be clouded by a dread of a recurrence of their danger.

One of the most heartening things in all nature is the power of wild things to recapture their equanimity. Even after the most thrilling crisis their poise swiftly returns. If a man is shot at in the woods at twilight, he may run all night and far into the next day. It may take him months or years to get over his fright; and his experience will be as much the main topic of his conversation as their operations are to some who have undergone them.

When I suggest for us a swifter recovery of joy as one of the certainest ways by which we can increase our vitality and therefore our charm, let not the reader think I am moralizing or sermonizing. I am in no way superior to him; all I have done is to study nature in order that I might bring home for myself and for others some ideas, learned in the wilds, that may make life a less tedious and difficult business.

Once I was talking to an old woodsman of the good times we *would have* hunting when the game was more plentiful, the weather was just right, and all other conditions were exactly favorable. Wisely and quietly he rebuked me by saying, "Now is the time." In the sense that it is the only time of which we can be certain, now is always the time.

We make great preparations for joy—a joy that we hope to realize in some distant future. In Nature I find that wild things catch the joy of the moment; not because they have reasoned out the uncertainty of life, not because they are incontinent, but rather because they act from instinct—that dim infallible prescience that is both swifter and surer than logical wisdom.

Lately it was my privilege to go far out into the woods, byways, fields, and hedges to try to rescue by feeding the birds that had been sorely suffering in a wild blizzard that had brought in on its mighty wings

more than two feet of snow. With a shovel I cleared patches of ground in the lee of trees, bushes, and fences; and there scattered feed. The starving birds at once found it. I noticed particularly a pair of cardinals. With their scarlet plumage blazing against the snow, they fed in their fastidious fashion; then they both hopped up on nearby bushes and began to sing,—in all that cold, and with lowering storm-wracks still scudding overhead! They didn't mourn about sunny yesterdays; they didn't whine that they would surely freeze to death very soon. They sang. I could not see much to sing about; perhaps they had a blessed hope of which I was unaware. They didn't wait until spring to rejoice. They hymned their thanksgiving and their happiness that very afternoon. "Now is the time," I thought. The present is very precious. It alone is alive; and we are wise if we are alive and rejoicing in it.

As regards the keenness of all their physical senses, wild things are infinitely our superiors. Their awareness is amazing. And they have a grave beauty and rejoicing looks that prove their poise, and that their spirits are at peace. They aren't sad pilgrims. I do not think that they feel like lonely wanderers here. This earth is truly their home. They love it, and they enjoy every day the life that it offers. We should justly envy them their serenity; they are happy with what is given, questioning not what may be withheld. They are great lovers of life; not yesterday's or tomorrow's, but today's. Moreover, they have a deep respect for the value of the privilege of living. They never go on sprees; they never take foolish chances. They always seem prepared for a crisis that will call forth all their powers. Their enthusiasm for life compels them to take care of themselves; and they never dull their senses by wilful caprices of indulgence.

Much of their capacity for happiness today comes from their sane behavior yesterday. They always take ample time to rest. We rush so much that when we stop, even to gasp, we are afraid of being accused of loafing. Nature's children relax regularly every day; and that not only affords them enjoyment but prepares them to accept gracefully whatever may come.

"AN OLD RACCOON ASLEEP IN THE LOW FORKS OF A TREE"

Immediate adaption to new circumstances is in itself a manifestation of a kind of genius for living. Once I had this matter rather comically illustrated to me by an old raccoon that I caught asleep in the low forks of a tree. I had been wandering down an old bank that crosses the wide and desolate domain of Blake's Marsh, a part of the magnificent hunting preserve of the great Santee Club. The raccoon made no particular objection to being captured; indeed he snuggled down in the hollow of my arm and continued slumbering as I walked along. After a while I heard him giving what I took to be growls; and thinking that I had counted too much on his good nature, I was preparing to put him down when I discovered that he was placidly snoring! It was the hour of the day for his siesta, and he wasn't going to let even a man interrupt him. To me, his behavior meant not stupidity but a calm acceptance of life, whatever changes or chances might come.

In not worrying about yesterday or tomorrow, wild things are wise; but it is true that they often prepare for the future. Once in the late autumn I camped in an old mountain shack that had been deserted by everything except the mice. I rarely saw them except at night, when they frolicked in their antic fashion over the old boards of the floor. But one night they kept me awake. I never saw such busyness in all my life! Deserting play and even the humble elfin search for crumbs, every member of that funny little furry tribe was hard at work, all night long. And what were they doing? Carrying grass from outside the cabin to their nests. Such pulling and pushing and merry jostling! It seemed to me that they must have brought in half a bale of dry hay. Before daylight a wolfish wind had begun to snuff at the doors and windows; and by morning a wild storm was raging, and the temperature had dropped precipitously. These elves had known of this trouble's coming, and had prepared for it; but they did not go about the business with any of the spectral and fantastic dread with which we usually presage the future.

Of course, it would be silly for me to recommend that we live on terms with mice; but our pitch of pride

and superiority should not be such that we cannot learn salutary lessons from the humblest sources. I like and would imitate the way in which wild creatures do not abandon themselves to panicky fears, to long fits of dejection, to a vain dwelling on the past. I love the way they enjoy the day and the night as they come; they give a new dignity to life by their respect for its privileges. Lingering not on the past, they capture the joy of the moment, and seem to take the sane attitude that the future need not be dreaded. They live to live; and for that same reason elemental peoples often get from life more constant and durable satisfaction than we do because they move along with the rhythm of existence. Close to nature, they feel themselves a part of its mighty movements, accepting joy and sorrow, not with flagellating ecstasy or deep despair, but as the normal sweet and bitter of our human destiny.

It has often been my duty, during a time of flood, to go out in a canoe over the submerged delta country of home to try to rescue stock, marooned on tiny islets or swimming desperately for the mainland. At such a time, when all the swamps and lowlands are deeply drowned under twenty feet of a ramping tawny tide, one sees wild life in great extremity; yet about the behavior of these refugees I never noticed any relaxation of their beautiful vitality, any giving way to faithless fears. I remember seeing on a pile of sedge, dislodged from its ancient moorings in the swamp, and swept seaward on the affluent rupture of the mighty tide, a family of tiny marsh-wrens. All their own haunts had been destroyed; wide and stormy waters ringed them; the mutinous dim ocean lay before. And what were they doing? They were hopping about gaily, investigating the chinks in their precarious raft for food, and now and then caroling gaily. In such a situation, a man might do anything but sing; and I don't think the difference in attitude can be accounted for wholly by a difference in mentality. It would be fairer to say that we overwork our fear of the future, forgetting that life's bridges are hardest to cross in imagination, which has an unfortunate power to conjure up terrors that can never have a reality. As a rule, we suffer most from the things that never happen. Rarely indeed is one of us faced with a situation of immediacy with which he cannot go through, even with grace of heart and gallantry of behavior. But what man or woman could survive the disasters that he or she imagines?

We often say that hopes deceive us. Sometimes they do, especially if we permit them to be too roseate. But for my part I have found fears to be far worse liars. Most fear, especially of the future, should be considered a vice, to be crushed on the threshold of the mind.

Not long ago I was talking with a dear friend, a man who has lived a very active and a very useful life. His physician had just told him that he had not more than two months to live.

"I'm reconciled," he said gently to me, "to everything except one thing: I never thought of trying to enjoy each day as it passed. I was always looking forward to a time when I would have a chance for all that. Now it is too late. I'm trying to tell my children to be enthusiastic about today. I am learning only now, when it is almost useless, how precious is each moment of life. I squandered my chance for real happiness without knowing what a crime I was committing against myself, those whom I love, and even God. Not to appreciate today, which is the only vital time of life, is a kind of silent blasphemy."

Once, after a rare and terrible snowstorm on my plantation, I caught more than a hundred half-frozen wild birds and brought them indoors, liberating them in the huge old ballroom that occupies one whole wing of the house. I built up a roaring fire in the cavernous chimney. Then I cut some holly trees laden with their scarlet berries and leaned them against the wall. In a little while my visitors thawed out, forgot all their troubles, began to feast on the bright berries, and to favor me with a marvelous woodland symphony. Flying delightedly from the trees to the ample hearth, they would bask in the ruddy firelight and preen themselves, only to return to revel at their banquet. Chilled momentarily by the storm, they swiftly returned to their vitality, to their natural joy, which transformed them from shivering refugees to charming guests. They taught me that fear is a false god; and that, while we cannot be always rejoicing, the present is the time for it. Fear seems to act as a hindrance to all virtues, lowers vitality, and appears almost akin to guilt. But confidence and faith are its sure conquerors. Love recognizes only hope and virtue—never fear and vice.

Yesterday, that far silent land in memory's moonlight fair, should be remembered only for the beauty and the happiness that we once found there; tomorrow, that veiled country, cannot be entered, even by the most penetrant imagination. Nature's children are neither idle dreamers nor sad visionaries. They are modern. They live today; and by so doing remain sane and joyous, loving every breath of life they breathe. Perhaps, in some sensible degree, we might wisely imitate them in their enjoyment of life as it is.

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**Who are the musicians in our insect orchestra? Which plays the bass viol and which fiddles on a violin? We are introduced to these versatile performers of the insect world in a splendid series of pictures in the rotogravure section of the August issue of Nature Magazine. These are only a few of the fine group of pictures in that section next month.**

# Three Myths about Lightning

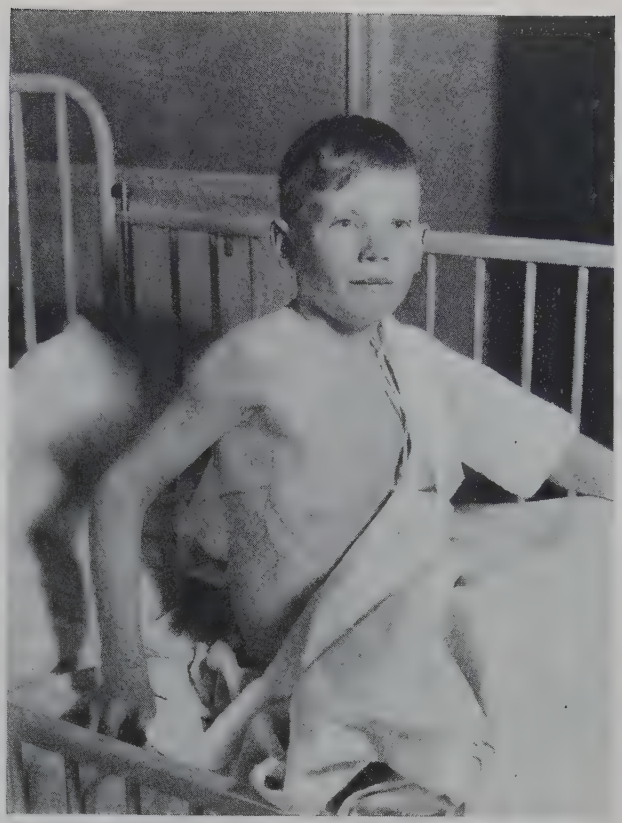
*By* CHARLES FITZHUGH TALMAN

A POPULAR book about lightning by that flighty genius, the late Camille Flammarion, tells the story of two trees, an oak and a pine, that grew side by side in a French forest. One day they were both struck by lightning. "In the twinkling of an eye," we are told, "their leaves were interchanged. The pine needles found themselves on the oak and the leaves of the oak went to brighten the austerity of the pine. All the people in the neighborhood crowded to the scene of this miracle to contemplate the extraordinary spectacle of a pine-oak and an oak-pine. Most unexpectedly, the two trees seemed to accommodate themselves very well to their new condition. The pine remained agreeably adorned with its summery foliage, while the oak got along perfectly with the somber needles of the pine."

Flammarion does not claim to have been an eye-witness of this astonishing transformation. It is, however, a case for Mr. Ripley that he apparently believed this ridiculous fairy tale and expected his readers to share his credulity. I should hardly venture to tell *that* story if the book were not easily accessible in public libraries to bear me out. In the same book you will find a number of other tales about lightning that need to be taken with several large grains of sodium chloride.

Nominally serious literature contains a great many stories of impossible occurrences in the realm of Nature, and a goodly proportion of them relate to lightning. How do such tales originate? Not, as a rule, through deliberate invention on the part of anybody. Usually they get their start when somebody jumps to wrong conclusions from the observation of a thing that actually happens. Later, the story "improves" in the retelling, as stories will.

There are three miracles that have been frequently ascribed to lightning because people misinterpreted some of the genuine performances of that truly wonderful and versatile natural agency. Lightning has been believed for ages to smite the earth with solid "thunderbolts," or "thunderstones." It really does often produce in the ground objects that the uncritical observer readily assumes to be such missiles. Lightning was formerly supposed, even by scientific men, to make the "fairy rings" frequently seen in lawns and meadows. It actually does sometimes produce bare patches—roundish but not ring-shaped—by killing vegetation. Lastly, the same agency has been widely credited with taking photographs on the human skin. What it really does in such cases we shall see in a moment.



LIGHTNING'S AUTOGRAPH

Electric burns on the ribs of a youngster struck by lightning. In a few days these faded away

Belief in thunderbolts was not unreasonable in a pre-scientific age, since the violently destructive effects of a lightning stroke seemed to imply the impact of some solid projectile, such as, in the old religions, was supposed to be hurled by the angry gods. The actual falling of meteorites may have contributed to this belief, but it is not unlikely that it owes its origin to the finding, at places where lightning had been seen to strike, of the mineral formations now known as "fulgurites" or "lightning-tubes."

These tubes are formed by the fusing of loose sand along the path of a lightning discharge in the ground. The inner surface is of smooth glass, while the outer consists of rough incompletely fused particles of sand and is often much ridged and furrowed. Some specimens are branched like the roots of a plant. Tubes more than twenty-five feet

WHERE LIGHTNING STRUCK

A bare spot in a potato field where the plants were killed by lightning. "Fairy rings" were thought caused by lightning

long have been found, but they are so brittle that long pieces are seldom dug up intact.

Fulgurites are rather rare in museums, but there is no reason to doubt that many thousands, at least, are produced every year by lightning, and as they are durable objects the number of them now in the ground throughout the world must be enormous. They are most often found in places where the removal of the surface soil by the wind has exposed them to view.

A fungus colony, starting at a central point and gradually spreading outward, may produce a narrow circular band of bare soil bordered by luxuriant vegetation. The ring grows from year to year and may eventually become scores of feet in diameter. As long ago as the year 1563, William Fulke, the Puritan philosopher, declared lightning to be the true cause of "those round circles that ignorant people affirm to be the rings of the fairies' dances," and this hypothesis held its ground in the scientific world for more than two centuries. Thus Erasmus Darwin, grandfather of the immortal Charles, wrote in 1791:

AN ALLEGED THUNDERBOLT

The once universal fallacy that lightning hurls a solid "bolt" is still prevalent

"So from dark clouds the playful lightning springs,
Rives the firm oak or prints the fairy rings."

Only in recent years has science recognized the fact that, although these slender rings are the work of fungi, large roundish areas of dead and injured vegetation are the not uncommon result of a thunderstorm. Such patches have been noted especially in fields of growing crops, such as cotton, potatoes and beets. Near the center the plants are killed, while toward the border they show wilted leaves and other evidence of injury.

Apparently in such cases the lightning does not strike the individual plants generally over the injured area, or at least its main force does not pass through the length of their stems. It is supposed to strike the ground at a single point, after the top soil has been moistened by rain. Between the wet surface soil and the water-bearing soil beneath there remains a layer of dry earth, which is a poor conductor of electricity. The discharge spreads horizontally in all directions in the upper wet layer and then downward into the earth, following the lines of least resistance. The plant stems and roots, because they contain an abundance of water, are better conductors than the layer of dry soil, and so the electric current passes through them, causing the injury or death of the tissues. The branching currents are naturally strongest and their effects are most severe near the spot where the lightning strikes the ground.

Another way in which lightning sometimes leaves mementoes of its visits is the production of branching pink marks, called "lightning-prints," on the skin of a human being or other animal who is struck by the discharge, with or without fatal results. If the victim recovers, the marks fade away in the course of a day or two.

That these marks are photographs of trees or other vegetation growing near the place where the stroke occurred is a foolish belief once accepted by a good many scientific authorities and still an item of popular faith. The correct explanation, first given in the year 1862 by the German pathologist, Eduard Rindfleisch, is much simpler. A lightning-print is merely the trace left by the passage of a branching electric discharge through the tissues of the body. In other words, it is a species of wound, and it is sometimes seen on the bodies of persons who have been killed or injured by artificial electric currents. Dictionary-makers, by the way, know these prints only under the name of "keraunographs."

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**Ever since its foundation in 1922, the American Nature Association has kept steadily at the task of furthering practical conservation of our natural resources. Much of this activity has been expressed through the pages of Nature Magazine. At the same time there has been much additional educational and research work accomplished that has taken form in bulletins, the Roadside Bulletin and in educational publicity. Nature Magazine, itself, is not a commercial enterprise, and those who support the Magazine also support the constructive endeavor of the Association. The future of our natural resources in wildlife and the outdoors depends upon the intelligent activity and leadership of our best citizens. Our new Conservation Department indicates the responsibility of that leadership. There is, however, strength in numbers. Many members know men and women who believe in the work of the American Nature Association. We want their cooperation and support and to that end a nomination blank is provided in the latter part of this magazine for the use of loyal friends of the Association. If you do not wish to cut the magazine, a nomination by letter will suffice.**

CHI-PEEP IN PENSIVE MOOD PERCHED ON HIS GRAPE-BASKET BED

A poor little runt, he was, with feathers that never fully feathered out and a crippled toe that was a severe handicap to him throughout his short life

# Chi-peep, the Abandoned Titmouse

*By* ALBERTA HADEN SAFFORD

*Photographs by Harman Nicodemus*

It was the second day of June and Mr. and Mrs. Tufted Titmouse had been feeding a nest full of babies for a long time, it seemed to us. Was it a case of rickets? Our feeding tray had been empty, purposely, for some time to forestall artificial feeding; but the titmouse parents had discovered a never-failing supply of sunflower seeds across the street at a neighbor's.

That Saturday afternoon we heard the insistent chirp of baby birds, and found two darling titmouse babies perched on the Silver Moon branches which twine around the nest-box at the top of the garden arch, and a third hesitating in the doorway. From within came the chirp of still a fourth. All afternoon we kept a protecting eye upon the three babies hopping about in the forsythia bushes; but the fourth continued to chirp from the nest-box. Father and Mother Titmouse were quite evidently disturbed about him. So were we.

THE FEEDING TRAY

The titmouse was given a protected place to play

On Sunday morning not a titmouse was to be seen; and yet the fourth baby still chirped in the box. For five hours we watched; but the parent birds did not return to feed him. At last we could stand it no longer. In spite of the vicious Silver Moon thorns and the admonitions of our naturalist neighbor, we lifted down the box.

Oh, the pitiful little runty fledgling that scuttled backwards in the nest, scarcely half feathered and with a crippled toe that refused to close strongly as it should. We lacked the Spartan nature of his parents; so Chi-peep was tucked into a grape-basket bed, and the problem of food considered.

Hard-boiled egg was the first thing to hand. Then gradually we added bits of angleworm, thoroughly masticated sunflower seeds and peanuts, tiny pieces of fresh ground beef, and dried daphnias, the carcasses of small water fleas put up for fishes. This last food was sug-

gested to us by a pet dealer when we failed to get the meal worms we had asked for. We mixed it with the yolk of the egg.

It was a task we had set ourselves—food and water on an average of every half hour all day long for three weeks—but it had its compensations. How many things we learned! First, there was the instinct which made Chi-peep draw down close into his coverlet when a hand descended too rapidly toward him. Then, how astounded and amused we were at the way in which Nature had taught him to back up to the edge of his nest and deposit excrement over the edge.

He soon outgrew his basket; so we rigged up a makeshift play-pen on a broad window sill by fastening a piece of cheese-cloth to the edge of the window shade and then to the sill and putting Chi-peep's basket between the window screen and this cheese-cloth. Here he could hop about, and have the company of the birds who fluttered up to the screen in curiosity. And here he would perch on a stick and massage his weak foot with his bill, pushing the limp toes down and back and making them grip the wood. His crippled claw was growing stronger day by day when he had the misfortune to catch this foot in the cheese-cloth and wrench it; and then it was all to do over again.

This time, after a few days of enforced rest in his basket, we began to teach him to hop from one stick to another held about a foot away. Then we gradually lengthened the distance as his foot grew stronger and his balance better until he was flying a bit.

FOOD FROM FOSTER PARENTS

As he grew older he was given lessons in how to acquire food for himself in the wild

In the evenings when the sun was low, and we sat on the lawn, we set Chi-peep free to fly among the flowers and bushes. Now and then we whistled the titmouse call and held a small stick up for him to light upon. He soon learned to "home" to this particular stick.

His favorite spot was under a low privet bush among dry oak leaves which had drifted there. There he sat in a spot of sunlight and preened his feathers and pecked about for bugs. It was a memorable occasion, indeed, when he found a minute green worm and devoured it. It was here, too, that he taught us his need for green leafy food. He tugged so hard at tough privet leaves that we offered a bit of lettuce, which was enthusiastically accepted.

The birds, especially the sparrows, were curious about him; and our little white poodle could never be done sniffing at him; but he seemed utterly unafraid. As the sun sank in the evenings and the air grew chill, Chi-peep would return to us, of his own accord, and cuddle close under our chins for warmth.

The window sill cage was now inadequate; so the man-of-the-house devised a flying cage for him. First he built a broad feeding tray, and fastened it to a window sill beneath an awning. Then the woman-of-the-house sewed a length of cheese-cloth to the edge of the awning and tacked it down to the edge of the feeding tray. With a few perches on the tray and some up under the awning, and sand on the floor of the tray, we had a protected outdoor flying cage where Chi-peep could get sun and air and yet be sheltered from wind and rain and enemies.

The tray reached out quite near to our bird bath under the crab-apple tree; so Chi-peep had company all day long. He learned from observation, too; else why did he try to bathe in the shallow dish of water on the tray? And was that a funny performance? As his sparsely feathered breast touched the water he jumped and actually shrieked his dismay.

All the time we had in mind the day he should go free into the world; therefore, Chi-peep had his daily lessons in eating and drinking as well as flying. His food was tucked under the peeling bark of small, half-decayed sticks and left for him to find; and instead of receiving a drop of water from the tip of a finger he took it from the tip of a leaf. Later we placed the leaf in the shallow dish, and in pecking at the leaf he discovered the water.

Each day when he went into the yard he flew higher and farther away, and was slower in "homing" to his stick; and then, three weeks after we took him from his box, he suddenly declared his independence and refused to come at our whistle at bedtime. Instead he flew high into the oak and stayed. It was a harrowing experience for his foster parents; but he never again slept in his cage. We took the cheese-cloth away, and called him to

THE TITMOUSE ON THE FLYING TRAPEZE

In order to exercise his crippled toe, Chi-peep was given a daily workout at the business of jumping from one twig to another, the distance between them being gradually increased

the tray for his meals; but each night he slept in the oak.

Still Chi-peep did not grow quite normal. His feathers were ragged and disheveled and not a waterproof covering in spite of his preening; and each thunder-shower left him wet and shivering. His crippled toe, too, was a handicap. Whether it was the rain that chilled him or the beating wind that broke his insecure hold we will never know; but on June thirtieth a terrific thunderstorm unloosed a heavy downpour and left his little body at the foot of the oak. We buried him in the garden.

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# A Handy Tool

*By*
FRANK W. BENTLEY, JR.

THERE are many devices, homemade and commercial, to dig and lift out dandelions with a minimum of stooping and effort. Most of them, however, do not get any great amount of the roots, and dig up far too much ground around the weeds, leaving an area that looks as though it had been peppered with a machine gun when the job is finished. The battle against dandelions is one which lasts almost until the snow flies, and when they are about half or full grown, it is a proposition of getting down on the knees and after the pests. Usual wide blade tools soon become tiresome to work with and dig up too much soil. You can make a much handier homemade device by taking about three and one-half inches of an old hacksaw blade, point it on the emery wheel from the blind side and fasten it in a metal file handle or holder, or drive it into a wooden one. This saw and blade-like affair slips easily deep down along the sides of the root at an angle. One or two movements of the blade and you have sawed it off well below the ground with no effort at all. The weed will not make another start during the season. The thin narrow blade disturbs little or no ground. In fact, you cannot see where it entered, but you will get the plant and a lot of its troublesome root. It can be worked with for hours without tiring the hands and wrists.

WILD FLOWERS ABOUND IN THE MOUNTAINSIDE PARKS

The supreme floral display comes when the prickly phlox puts forth its display on the flanks of Mt. Hood, and the green carpet becomes, overnight, thickly sprinkled with full-faced blossoms of marvelous hues

# The Alpines of Mt. Hood

*By* IRA N. GABRIELSON

*Photographs by Marshall*

DOMINATING the eastern skyline from the heights of Portland, Mt. Hood, one of America's most beautiful major peaks, rears its snow-mantled bulk high above the summit of the Cascades. It is reached by good motor roads in a pleasant two-hour drive through the foothills and up the western slope of the range that splits Oregon into two distinct geographic units.

Hood is neither as lofty nor as massive as Rainier, but its 11,225 foot summit is the highest point in Oregon. What it lacks in massiveness is compensated for by beauty of outline, for few mountains on the continent are more symmetrical.

Its upper levels, consisting of cliffs of light-colored lavas that weather into sliding talus slopes of pumice, are covered with numerous glaciers and huge permanent snow fields. Around and below this icy mantle is one of the most accessible western areas in which to see real alpine plants. Good roads lead almost to timberline on both the north and south faces, and from either it is a short walk into those natural parks, which are decorated through the summer with a variegated blanket of constantly changing color.

The real alpines found on these exposed slopes are hardy folk, impatient to be up and doing at the faintest hint of approaching spring. In fact, it is no uncommon thing to find the avalanche lilies or dog-tooth violets pushing through the melting banks of winter snow in their eagerness to unfold their nodding blossoms to a waiting world.

From the earliest blooming of the snow children until the fall storms again begin their annual task of sheeting the high country in an icy mantle, there are flowers in abundance to be found in these timberline parks.

In the upper reaches of the stunted and grotesque timber, yellow-faced arnicas provide a sprinkle of color throughout the season. These arnicas have an aristocratic and well-bred look too often lacking in the great family of composites to which they belong, together with the asters and sunflowers. It is a yellow daisy, but one of clear rich color on a stem neither too coarse nor too frail, and with just enough foliage decently to clothe the entire plant. It is abundant, almost universal, on the shaded slopes, furnishing a swaying blanket of yellow at the height of the blooming period and cheerful yellow individual stars to peer from the denser shadows all through the late summer. Among them are airy sprays of the delicate blues of the Oregon anemone, which in this soil takes a particularly vivid hue that contrasts effectively with the yellow of the arnica.

Through the upper edges of the timber, clumps of the pink heather, the nearest American approach to the Old World heathers, makes an appearance, to furnish a

IN EARLY SPRING THE BLOSSOMS OF THE AVALANCHE LILY UNFOLD

These are nothing more than the familiar dog-tooth violets in royal livery

shrubby foil for the color display of the alpine turf.

Along the tumbling glacial streams an irregular band of bright yellow monkey-flowers form the most conspicuous color element in the summer vistas. In contrast the soft color of the pink monkey-flower, *Mimulus lewisii,* appears as islands and bays in the flow of the more abundant yellows. On the dry slopes above, the plumed seed heads of the great alpine anemone, *A. occidentalis,* serve as a picturesque reminder of the time when the great hairy buds were pushing up at the very edge of the melting snow banks to unfold wide creamy chalices close to the ground, long before the leaves ventured forth from their winter's sleep.

One of the greatest shows on Mt. Hood, in common with the other isolated volcanic cones that dominate the Cascadian skyline for five hundred miles, comes early with the unfolding of the airy blossoms of the avalanche lily. These are nothing more nor less than the familiar dog-tooth violets, *Erythronium,* in royal livery. The huge, soft white, recurved flowers, each with a golden center, grow in such amazing abundance that the slopes for miles are a dancing carpet of miniature lilies with all the aristocratic appearance of the family. Just below, in fact often mixed with them, particularly on the eastern face, is the equally attractive butter-yellow form known widely in the West as "glacier lily." Both grow from elongated bulbs which, each year, form the new growth on the base of the old bulb. As a result of this curious habit these bulbs literally dig themselves in until the most aged are twelve inches or more below the surface. Complications result when this digging-in process is brought to a sudden halt by solid rock. The erythroniums persist in trying to form their growing buds beneath, and this results in club-footed bulbs that occasionally assume most grotesque shapes. Another attractive member of the lily family, the little cat's ear, is found growing with them. This name is singularly appropriate for little *Calochortus subalpinus,* the inside of its soft yellow flowers being generously filled with long silken hairs until it does resemble, to a remarkable degree, the furry appearance of a cat's ear. Hairy as it is, however, the yellow one found at timberline is not as hairy as the lavender species found in the open glades far below.

All through the summer these alpine meadows are bedecked with blue and gold and red as a succession of plants blossom and race to put forth seed in the short growing span allotted to their lofty home. The blazing scarlet and carmine bracts of the Indian paint-brush are inevitably present as the most brilliant color accents in a colorful landscape. The dwarf daisies, represented here largely by the erigerons in various hues of yellow, blue and lavender, are so abundant at times as to form solid carpets over square yards of ground, and plants of the mountain gentian, *Gentiana calycosa,* bearing huge upturned trumpets of deep velvet blue, can be found by a little searching in these rich meadows of the upper highlands.

CAT'S EAR IS THE SINGULARLY APPROPRIATE NAME FOR THIS

The inside of this pale yellow wild flower of the mountains is much like a cat's ear

BRIGHT YELLOW MONKEY-FLOWERS FORM A CONSPICUOUS COLOR ELEMENT

They are found by the tumbling glacial streams, and the pink monkey-flowers form islands in the flow of the more abundant yellow relatives

These and many others enter the alpine floral picture, but the two chief attractions on Mt. Hood still remain to be mentioned. The first, but not necessarily the best, is that furnished by Lyall's lupine, which revels in the pumice slopes that cover so much of the above-timberline area. Here it grows as a flat silver-plated rosette of much-divided leaves about which are carried, on short stems, spike after spike of miniature sweet peas in heavenly livery. The dark blue of the main part of each flower is accented by a touch of white—the entire ensemble producing a plant of perfect balance and beauty. Where this dainty lupine is growing in great masses against a background of snow and ice, as it does in favored spots, the effect is indescribable.

It is frequently said that Nature never permits bad color combinations in her natural gardens, yet one of the commonest associations on the heights is the scarlet and carmine spikes of the Indian paint-brush against a background of dark blue lupine. This display may be against all the rules of the color-matching game, but it would delight the heart of a child or an Indian with its barbaric brilliance.

The second supreme floral display comes when the prickly phlox, *Phlox diffusa,* puts forth its myriad blossoms of pink or white and lavender. There is no alpine plant more floriferous or more showy. Before its time to bloom it is a somewhat sullen little dark green mat that becomes transformed overnight into a green carpet thickly sprinkled with full-faced blossoms of marvelous hues. While there are many muddy-colored plants among this group, few find their way to the heights. Here in the pure air and bright sun, the whites are ivory pure, the lavenders delicate pastel shades impossible to reproduce, and the pinks, losing their fiery tendencies, become softened to most enchanting hues. This purity of color tone is exceedingly noticeable among alpine plants, but nowhere is it more marked than among these little fire flames that grow in such profusion in this alpine home.

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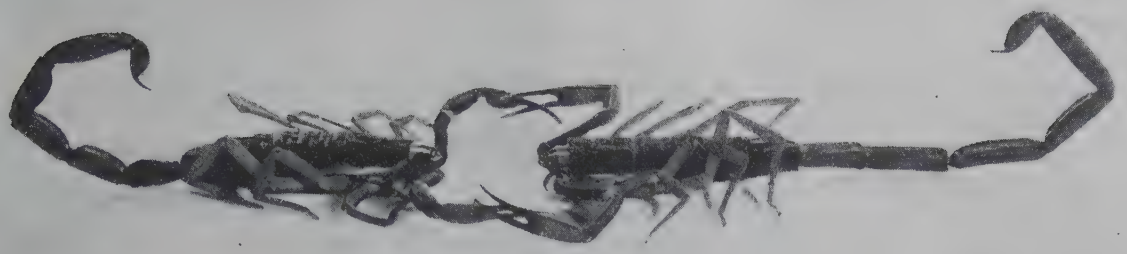
Dr. Wendell Chapman, who gave us that charming bear story with its splendid illustrations some months ago, returns to Nature Magazine in the August issue with an equally entertaining story of beavers. Again, Dr. Chapman's pictures are outstanding. One of the most interesting sections of our country, both geologically and botanically, is the sand dune region of Indiana. Next month, Captain Charles H. Robinson introduces us to this fascinating and unique section. In the Conservation Department we learn of the great danger that faces the white heron and of the complex problem of preserving for posterity the great bears of Admiralty Island, Alaska. The August rotogravure section brings together sixteen more pages of remarkable Nature pictures.



IN THE SPRING COMES THE SEASON OF LOVE AMONG THE SCORPIONS

Here is the wedding march of a couple, the claws of the male clamped to the female's claws. Off they go, the male backing and pulling her after him, she protesting

# BLACK SCORPIONS

*By* RALPH T. FOLWELL

*Photographs by A. S. Moser*

When one summers in Florida for the first time, he learns many new and interesting things that winter visitors miss. Especially is this true of the arachnid kingdom. One soon learns, for example, that from May to October is the open season for black scorpions, those arthropods so much feared because of their painful red-hot sting.

Like most new-comers to this tropical paradise, I believed the scorpion a dangerous insect. Therefore I was somewhat panicky one night when my five-year-old daughter, in her bare feet, stepped on a big one and was severely stung. She screamed and collapsed in a heap. Excitement prevailed. Over the phone, the doctor told me to apply ammonia until the pain subsided. He said to think nothing of it as it was not serious. I was provoked at his indifference and had visions of suing him for gross negligence. However he was right. The ammonia soon relieved the pain and there were no evil after-effects.

While it lasts, the pain is intense, causing a red-hot surge through your veins. It may even cause dizziness and fainting. However the pain usually tapers off to nothing in from fifteen minutes to several hours.

When I decided to capture some of these nocturnal paraders and observe their habits, my family became alarmed and suggested that I have my head examined. I overcame this situation by interesting a neighbor in my plan. He agreed to pen up the scorpions at his place. As he was a professional photographer, this worked out finely. He took many excellent pictures.

We tried to make our prisoners feel at home by putting some sandy loam on the bottom of the glass aquarium. Also we provided some rotting wood and chunks of limestone under which they could hide during the daytime.

It was late September when we finished the pen. Scorpions were becoming scarce. However we corralled a representative number ranging from babies to grizzly old grandpas.

HAVING LUNCH A LA ROACH

Note the raised tail of the scorpion ready to sting if the meal objects to such treatment

Food for our black guests was a problem. We heard that they ate only live insects. So we prepared a banquet of mole-crickets, grasshoppers, moths, fat spiders and a large brown roach. But the live meat would have died of old age if they had waited for the scorpions to eat them. The intended victims managed to stampede the poor scorpions into a huddle.

After a few nights of this bravado, a roach, exhausted, nestled down for a nap on the head of a scor-

pion. This was rubbing it in too much. Vice-like pinchers clamped ahold of Mr. Roach. He tried to jump away. Too late! Over came that black tail with its hypodermic needle and administered a fatal jab in the thorax. The feast began immediately while the roach was still kicking weakly.

Repeated observations showed us that the black scorpion never kills unless in self defense or when hungry. He always first catches his prey firmly in his claws, then stings it as many times as necessary to quiet it. He begins to eat while his victim is still partially alive. If two scorpions want the same insect they will fight for it by pushing each other away with their tails. Occasionally one will sting the other just enough to stupefy him. We have never been able to induce them to eat any totally dead food. We tried offering insects still kicking but minus their heads. No use—the insects were untouched. The scorpion must catch and sting its own food. Invariably they begin to eat the head first. But to get back to the other insects left in the pen, they were untouched and had to be rescued from starvation.

SCORPION CANNIBALISM

Above, a mother scorpion does away with her husband and is caught in the act. Below, the scorpions left and right having a peaceful snooze, the one in the center being aroused by the click of the camera

It is remarkable how active the black scorpions are all winter without any food. They seem to sleep, but can easily be stirred up into great activity. In winter they seem gentle and do not show much fight, hardly using their tails at all, even to push away their adversaries.

At last spring came, bringing the mating season. Nights revealed great goings-on in the pen. We saw them running around excitedly. Often when two would meet face to face they would almost stand on their heads in an effort to hook tails in a friendly or a flirtatious greeting.

This greeting sometimes ended by having the male grasp in his claws the claws of the female.

IN OFFENSIVE POSITION

The black scorpion, tail erect ready to sting the invader. This sting is painful but not serious, subsiding in a short time

Then away they would go, he always walking backwards pulling her after him. Thus they would strut around until they retired under a piece of wood or a stone.

Maybe now they would be hungry! So we fixed another live Bar-B-Q. Some struck and ate ravenously. Some were still sulky. Now at one sitting the hungry ones ate an insect as large as their own body and in about two days they repeated the order and ate until they looked like stuffed toads.

One May morning a sulky one was seen out in the daylight. It looked thin and pale, if a black scorpion can look pale. I pushed over the stone near him and there was the reason—he had stepped out of his skin. There was the shell, almost perfect, legs and all. This scorpion had not eaten yet this spring. A few nights later he stalked a big palmetto bug, harpooned it and ate ravenously. They eat everything but the legs, wings, antennae and shell.

We watched a hand-holding couple on parade. After a while they stopped in front of a large stone. The male backed within reach and using his tail, dug away the dirt until he had made a love nest. This accomplished, he backed in and pulled his sweetheart after him.

Next night we beheld a tragedy. There had been some dirty work, for there in front of the love nest sat the lady in question finishing off the last few mouthfuls of her erstwhile husband. The evidence was dead against her. She had killed and eaten him.

Late in August we discovered a young mother releasing some baby scorpions from their shells or casings. Evidently the babies are born each one encased in a tiny envelope of white skin. The mother has her hands full trying to free some twenty of them. When freed they hastily climb up on her back where she has made a nest of the empty casings. The youngsters all seem to have white cloaks over their bodies. At the end of about ten days they shed this white cloak and emerge, perfectly-shaped, jet-black and about one quarter of an inch long.

For some two weeks more they park on mamma's back. However, their daily, or, I should say, nightly activities increase until they are large enough to strike out for themselves. As babies their sight is poor. If they fall out of the nest it is hard for them to find their way back without guidance. Poor eyesight is not restricted to the young. Many of the grown-ups are blind.

When the babies fall off her back, the mother tries to rake them in with her long arms provided she does not have to move her body. So long as the children are in the nest she moves around little and slowly. Nor will she unfurl her tail for fear of harming or disturbing them.

Most amazing of all—the young grow to be more than an inch long before eating anything. So far as we could observe the mother has no way of feeding them. Nor does she show them how to catch and eat any food. In fact until they all grow up and leave home, she does not attempt to kill or eat anything herself or show them how.

Finally, should one of the young scorpions get killed in a family row or accident, it is not left on the field of battle to wither up and blow away. The mother very gently draws it to her and eats it—if she can find it. By the time the young have left home it is again fall time and the cycle of life begins all over again.

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# EYES

*By* JEAN BORZNER

LADDIE is a greyhound, sadly blind. Smooks is a wire-haired fox terrier with a pair of bright eyes. Both belong to Betty Farber of Syracuse, New York. After more than a year of blindness, during which he was constantly bumping into trees and poles, Laddie found a friend. It was Smooks, who gives the older and larger dog a constant devotion and provides him with eyes. Although they never travel leashed together, Smooks is always dashing in front of Laddie when obstructions appear or danger threatens. So the little terrier brightens the darkness for Laddie, much as the faithful dogs of the Seeing Eye at Morristown, New Jersey, do for their human masters and mistresses. Who can deny reasoning ability to a dog that shows such intelligent devotion?

# CRATER LAKE

*By* JOSEPHINE OPSAHL

A VIEW OF BEAUTIFUL CRATER LAKE
The island is known as Wizard Island, of ancient volcanic origin. About it the Indians of the region weave a weird story

IN CREATING Crater Lake, Nature dipped into her bag of tricks many times before she was satisfied with the spectacular result she produced. In a fit of frenzy, she shoved up a giant mountain; with a cuff of her mighty arm, she removed its summit; and then, like a small boy sorry for his misdeeds, she attempted to undo her mischief by replacing the missing summit with a multiple cone.

Crater Lake is situated high up in the Cascades in southwestern Oregon, and can be reached by train, bus or private car. It was first discovered by a party of gold prospectors in 1853, but it was not until 1902, however, that the United States Government recognized its unusual geological formation and set aside two hundred and forty-nine acres surrounding it as a national playground. In addition to the lake itself, the park includes the Garden of the Gods; Sand Creek and Anna Creek Canyons; Garfield, Glacier, Vidae, and Scott Peaks; The Watchman; Sun Notch; Sentinel Rock and numerous other points of unusual scenic grandeur and interest.

As its name suggests, Crater Lake partially fills the cup-shaped cavity of an extinct volcano. The gray lava sides in places rise 2,000 feet above the water line and are beautifully sculptured. The lake is nearly round in shape, is several miles across, and is the deepest body of fresh water in the United States, being two thousand feet in places. In color, it is an almost unbelievable blue and ranges from the faintest turquoise near the edges to the deepest Persian in the shadows. Crater Lake has neither outlets nor intakes that are known or visible, but it is supposed that water escaping from it by underground channels reappears in the Klamath River some sixty miles away.

Geologists have spent years in studying and recording the facts that we know today. They tell us that centuries ago, in fact, so long ago that it is doubtful whether a human eye ever saw it, Crater Lake was Mount Mazama, a volcano of the Cascade Mountain Ridge. From the slant of the remaining sides, they determined that Mount Mazama was nearly as high as Mount Rainier, or Mount Shasta, which still tower skyward thousands of feet in this same range of mountains. Here, however, the scientists themselves differ, one group contending that Mount Mazama, like other volcanoes of this region, merely blew off its cone, which scattered to the four winds. The other group point out that as none of this lava rock or ashes are strewn about the neighboring countryside, Mount Mazama fell in upon itself, leaving its craterlike lava-covered sides cut sharply downward into the central abyss. This all sounds strange, but we, too, can see what the geologists found, if we look closely. The lava on the remaining sides was not blown there by an exploding summit, but ran, hot and liquid, from a crater many thousands of feet higher up. After this stupendous eruption, the smoldering fires within Mount Mazama again burst up through the collapsed lava in three places. These eruptions made lesser cones within the greater one, but none as high as the surrounding rim. Then, as the years passed, the fires died and springs gradually percolated into the vast basin. Today, one of these cones still emerges a few hundred feet from the present surface of the lake near its western edge. It is known as Wizard Island.

While this undoubtedly is the correct interpretation of the origin of Wizard Island, the Klamath Indians of this region tell a more colorful tale.

It seems that Komookumps, their Great Spirit, was troubled with two ill-tempered and quarrelsome underlings, Llao and Skell. Llao presided over the spirits of Crater Lake while Skell's domain was that of Klamath Lake, some miles away. These lesser gods snarled at each other like two angry dogs. Skell was killed in one of their many quarrels. Llao, in frenzy, tore the heart from Skell's body and pompously presented it to his followers. They huddled together in horror on the flat top of what is now known as Llao Rock. Finally one of them tossed the gory heart back to Llao. He promptly returned it and upbraided them for their cowardice. For some time Skell's satellites watched this game of ball with the heart of their beloved master. Believing that he would come to life if his heart were restored to his body, they disguised themselves and mingled with (Continued on page 63)

# Our National Bird

*Photographed by W. Bryant Tyrrell*

On the preceding page we introduced to you our National Bird, the bald eagle, at the tender age of seven days. At that age he is covered with a thick light gray, almost white, down and is about the size of a two-thirds grown chicken. Above, the week-old eaglets are photographed in their grass-lined bed, dwarfed by the huge pile of sticks that compose the nest. Below, we see them at the age of three weeks, when they have taken on a thick, wool-like, dark gray down. This overcoat, on warm days, makes them pant continuously.

This eagle family was discovered, observed and photographed by Mr. Tyrrell in the top of a tall yellow pine overlooking the Magothy River some thirty miles from Baltimore, Maryland. The nest was visited frequently and the growth and activities of its occupants carefully recorded. When about three weeks old, the foot and tarsus of the young eagles were large enough so that an official band of the United States Biological Survey would not slip off, so the birds became known as A712086 and A712087. At the right, the band is being put on. Above, the eagles have added another week to their lives and now are four weeks old. The down has been pushed off by the developing feathers. Note the size of the crops of the growing youngsters.

At eight weeks of age the birds were nearly full-fledged, as shown above. It was at that age that the young birds were last handled. They had gotten their full growth and had begun to show the power and dignity of adults. They had a wing spread of fully six feet. Their claws were powerful and their beaks emphatic in their protests against this intrusion upon their home life and insult to their dignity. At the left, the two birds, now ten weeks old, are nearly ready to fly, and were photographed from a nearby tree. A week later a visit to the nest revealed one of them still at home, but as the observers approached he flew off and circled above them. From egg to flying bird it had taken eleven weeks of rapid and intensely interesting development.

# What Say the Clouds?

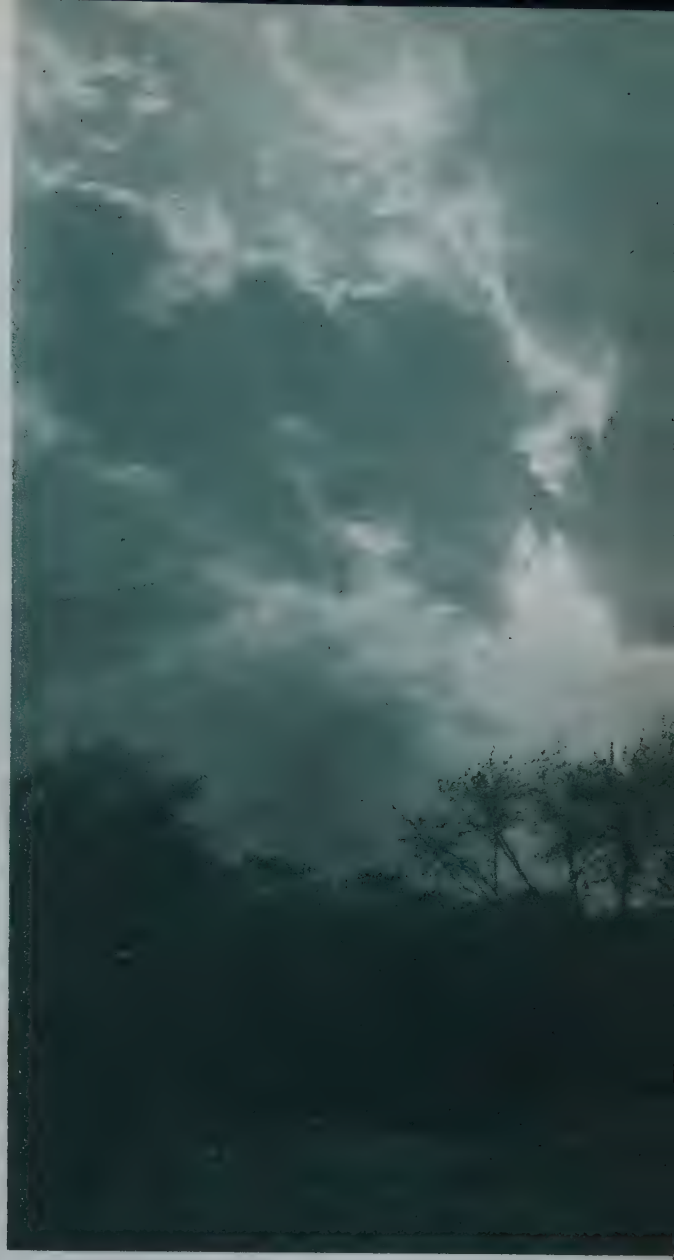
Many and varied are the interests of man, but one thing in which we are all interested is the weather. To the weather-wise the clouds tell a story of what we may expect tomorrow to be. Also, they have today an important bearing upon what flying conditions are in the upper air.

Clouds have figured for ages in religion and mythology. They have given inspiration to artists. They adorn glorious sunsets. They may be things of beauty or of ominous portent. They are ever fascinating.

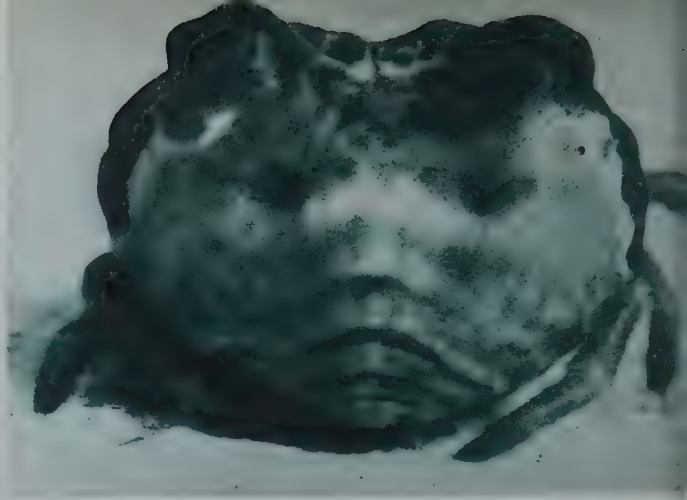
In the picture, above, taken by a Northern Pacific Railway photographer, a storm is brewing over the Montana Rockies. It promises lightning and sends the lookouts to their towers to watch for forest fires.

At the right is a remarkable picture of lightning. It was taken in Poland by Captain Jackowski of the Polish Army. In the foreground is the Wilejka River.

Three kinds of clouds. At the top of the page a group of wind-blown clouds makes fantastic figures at sunset. Photograph by Mrs. William Zeit. At the left is a formation known as the sheepherd. This is an alto cumulus formation seen only in occasional transition form in advance of storm areas. Below we see a cloud transition. When cumuli clouds become so numerous that they nearly, or quite, overcast the sky, they are called strato-cumulus. This often passes rapidly into stratus and then rain falls, which makes a nimbus. This transition may take place within a very few minutes. Photographs by Gayle Pickwell.

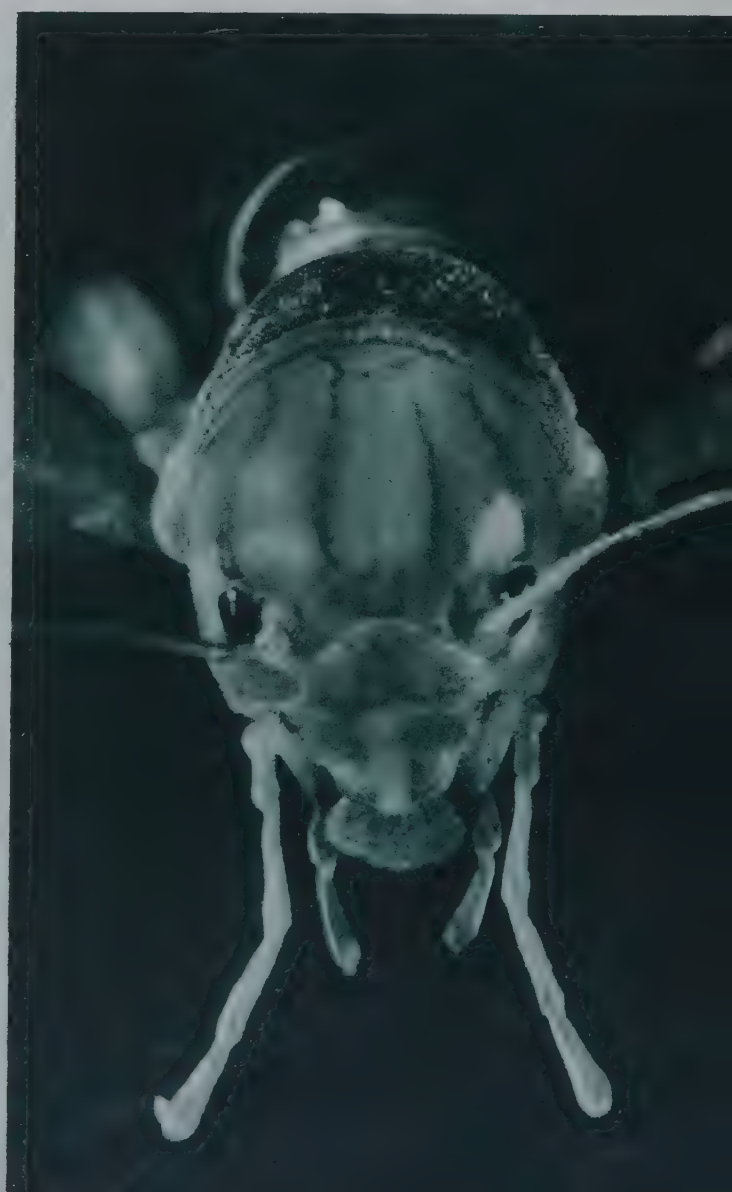


At the top of the page, at the left, an excellent example of a cumulus cloud. A warm, sultry, summer day is the mother of this type of cloud. Below this are the wisps of cirrus, thin strands of high, icy clouds, elusive and difficult to record on the film. At the upper right is a picture of what is known as scud, wind-torn clouds that fill the sky before or after a thunderstorm. At the right a picture of early spring days when the northwest wind is blowing and the sky is filled with low, fracto-cumuli clouds racing across the sky.



The strange looking affair at the left is only the chrysalis of *Vanessa antiopa,* the mourning-cloak butterfly, but it might be the mummy-case of Rameses II if we didn't know better. Above is the forbidding face on the east end of a toad spider going west, but, in reality, she is a timid little thing and harmless. At the lower left is a sphinx moth, *Sphinx cerisyi,* with a venerable Egyptian name and a Santa Claus face. Directly below we have, not his Satanic majesty, but a magnified view of the doodle-bug, ant lion or *Myrmeleon immaculatus.* Imagine being an ant and slipping helplessly down into the funnel-shaped pit toward the waiting jaws at the bottom.

# Garden Goblins



Two more strange goblins of the garden photographed by George Elwood Jenks, proving what strange things one may see when one looks.

The hobgoblin face above was found on a Southwestern spider of uncertain lineage, at least to the photographer. Moved by a certain weird resemblance, we might make the mistake of classifying it as *fasciculatus* of the genus *Olios,* family Heteropodidae. But we will hit closer to the actual specifications if we call it *Titiotus californicus,* family Ctenidae. Be that as it may, it is a strange looking affair at best.

At the right the Jerusalem cricket, *Stenopelmatus longispina,* appears to be a strange case of arrested development—a sort of permanent larva form. It belongs to the Order Orthoptera, which means "straight-wings," but it never grows wings. It isn't a cricket and, furthermore, it doesn't come from Jerusalem. No wonder the poor thing looks bewildered.

If the inquiring amateur naturalist will arm himself with a microscope and a camera and start exploring in the world of insects, he will find many more strange looking things that will well repay his study. These enlargements, of course, bring out the grotesque and amazing in otherwise tiny, unnoted but intensely interesting forms.

Elk Lake on the Olympic Peninsula as seen from the Hoh-Glacier Creek Trail that climbs steeply from here to Mount Olympus. This lake contains no fish and has never been stocked, testifying to the hitherto remoteness of this glorious wilderness section. A rough shelter is maintained here by the Forest Service for the benefit of hikers.

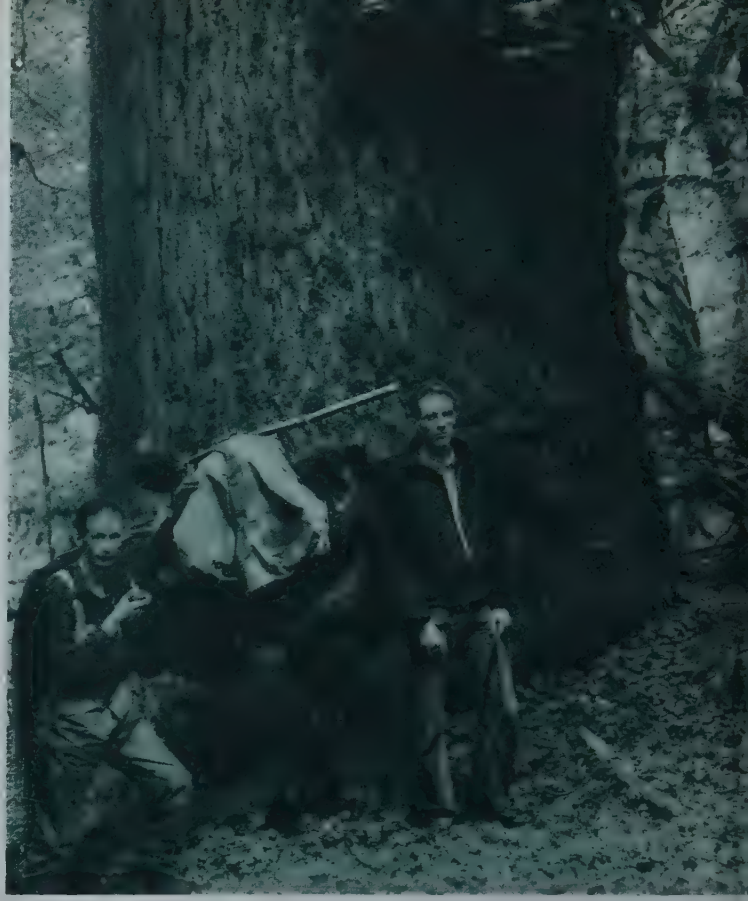
# An Outpost of the Wilderness

In 1907, Theodore Roosevelt set aside as a National Monument about 1090 square miles, including and surrounding Mount Olympus on the Olympic Peninsula of Washington. In 1912 this area was cut to about 500 square miles on recommendation of the Forest Service, then administering the area. Two years ago this National Monument was transferred to the Park Service.

Today it stands as a splendid wild area meriting a more important status and greater protection. There is the threat of lumbering and of unrestricted commercial development, and there is a growing demand that an adequate section of the beautiful and rugged Olympic Mountains be set aside as a National Park and thus preserved by the people of today for those of tomorrow. The Emergency Conservation Committee is urging a National Park of at least the area of the original National Monument.

This is a region of fine peaks, luxuriant forests and alluring wilderness. It should be added to our list of national playgrounds before it is too late.

Above are the three main peaks of Mount Olympus—East, Middle and West Peaks. The latter is the highest, being variously estimated at between 7900 and 8200 feet. The Ice River Glacier is here about a half-mile in width and of indeterminable depth. East and Middle Peaks are comparatively easy to climb, but West Peak is more difficult and presents some hazardous rock work for the last one hundred feet of the difficult ascent.



At the top of the opposite page is a typical scene showing the jungle-like growth of the upper Hoh River valley. At the right, George L. Kinkade, whose photographs these are, stands with a companion and pack horse beside a typical Douglas fir of the Olympics. Only prompt action can save such wonderful timber from lumbering and devastation. Below is an immense snow field, lying on a bench approximately three-quarters of a mile in diameter under the peaks of Mount Olympus. The human eye cannot see the bottom of the crevasses. Above, on this page, is White Glacier with the flanks of Mount Olympus on the left. High up on its precipitous walls the trail skirts a huge basin here. At the extreme right, in the heavily forested area, a dark line can barely be seen. Below this the timber is of younger growth, having sprung up in the barren moraine since the glacier receded.

# Bird Babies

Born swimmers, are the pintail ducklings above, downy little craft floating about on the water near which their home was made. Photograph by Finley. Youthful black-crowned night herons (left) can scarcely cause their parents to thrill with pride at their beauty, particularly at this stage of their lives. The young loggerhead shrikes at the lower left have a better claim to a beauty prize, although later on they will become marauders feared by other birds. There is a whimsical character to the pair of young bluejays below as they sit somewhat uncertainly on a limb and pose for their photographs. Young birds are always fascinating once they have gotten beyond the very nude stage. Photographs by L. W. Brownell.

Possibly as much of a curiosity in the bird world as the Dionne quintuplets in the world of man, this pair of albino robins make a striking and unusual picture. Photograph by Cornelia Clarke. In fact the baby spotted sandpiper, upper right, seems to be regarding them with amazement. Below, the three young green herons have a surprised look, also, as though they have just heard the news about this strange pair. Photographs by Brownell. In fact, at least four of the five least bitterns shown above are looking in amazement, too. The second fellow from the end refuses to believe his eyes, or, perhaps, dinner is on the way. Photograph by A. O. Gross. And something seems to be drawing the attention of the kingfisher quintuplets below. Photograph by Finley.

This is the time of year when the outdoors calls, when those who can sally forth to sleep beneath canvas, to live beneath the sky in the midst of Nature's beauties. Now thousands are moving by train and by automobile into vacation lands, and more and more people are seeking those simple and healthful pleasures of the open in National or State Park, in National Forest, or other vacation ground away from civilization's vexations.

# ★ Conservation ★

A section of Nature Magazine devoted each month to the expression of practical opinions on the vital issues affecting our use and abuse of natural resources, including wildlife, and dedicated to the purpose of assisting Americans to play a militant part in the attainment of constructive conservation aims.

ARTHUR NEWTON PACK, *Editor*

## CLOSED SEASON DEMAND IS JUST

There is much sentiment in all parts of the United States to stop the shooting of our migratory wildfowl for a season. It is a sentiment based on a clear-cut appreciation of the alarming condition of this group, and it is gaining in strength every day. The facts in the case are undisputed—the same facts that are advanced in support of a cessation of killing are cited by opponents of the same action. Were it not for the active opposition of certain groups, financially and politically powerful, that pose as friends of the birds, legalized killing would have ceased long ago. A survey, by a fair-minded tribunal, of the rapid diminution of this great resource, the result of the cumulative effects of settlement and the natural result of the mechanical civilization, accelerated by a periodical drought that is the worst in man-recorded history, would be so convincing that the immediate reaction would be a unanimous demand to lay aside the gun.

Objections to a cessation of killing group themselves into three more or less distinct classes. (1) A closed season cannot be enforced, and the illegal kill will be greater than the present legal one. (2) Good sportsmen who now feed the birds will be discouraged, and will neglect them. (3) The shooting clubs will abandon their properties, and the birds will be deprived of the protection thus afforded.

There are innumerable variations in the manner of presenting these objections. Some are plausibly phrased; some are fraught with the deepest ignorance; many are merely repeated—parrot-like. But to the candid critic, prejudiced only by a healthy and normal desire to perpetuate a beautiful and useful wild resource, they are all illogical and insincere. The best general proof of their futility is—that they advocate continuation of the very conditions that have resulted in the present undisputed condition of devastation.

Laws and regulations are enforced in exactly the proportion that the people desire that they be enforced. No law carries with it any guarantee of total enforcement—no law of God or man was ever enforced one hundred percent. Predictions of failure in the case of any proposed beneficial measure, however, show unmistakably that the prophets are against it. Believers in a proposed measure do not waste time or energy in predicting failure; they are busy working for its success. Knockers of a law or regulation have no place in the line of defenders. To the discerning, their very utterances will betray their duplicity; to the ignorant, their known record can generally be cited, to their undoing. Those who contend that a closed season on our harassed waterfowl cannot be enforced, therefore, are gratuitously naming themselves as enemies of the measure, and must be reckoned with by its defenders.

As to the contention that the illegal kill would be excessive, we cannot believe it. Such an argument presupposes that law-breakers are in the majority. The advocates of such a contention seem to us self-branded with the charge of being enemies to conservation. Certainly no true sportsman, and no sincere defender of the principles of conservation, will take such a stand.

As to sportsmen ceasing to feed the birds, if no shooting were allowed. Again do the exponents of this miserable hypothesis set the mark of ignominy on themselves. Do sportsmen feed birds only that they may kill them as they eat? Doubtless many do, but why boast about it? Why admit it, and at the same time pretend to be a friend of the birds? Give us rather the market gunner that pretends to no motive above the desire to kill the birds for money. Since earliest times men have despised the wolf in sheep's clothing.

If closing the season will result in disbanding the shooting clubs, let us try it. Their growth in size and number have been coincident with the decline of our wildlife. They constitute the spots where decoying, and baiting, and rest-days were invented and developed. In them bags of game are pooled and limits are sold at so much a head. It is certainly a severe reflection on the honesty of purpose of the sportsmen's clubs to assume that they will disband if the waterfowl season is closed. Our prediction is that the better class of such clubs will continue. As for those that are abandoned, they can be made into sanctuaries, and that is what the birds need.

We do not believe that closing the season will be

disastrous. Let us encourage the brave defenders of waterfowl in Minnesota, North and South Dakota, Wisconsin, Michigan, Iowa, Montana, Missouri, Nebraska, Illinois, Indiana, Florida, California and a few other states, both east and west, who are trying to defend the right. Let us follow the course that logic and proved fact dictate.

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## WHAT WE BELIEVE ★

The favorite recourse of those who oppose any restriction on the killing of wildlife is to label true conservationists as prohibitionists, sentimentalists, cranks, reformers and other terms calculated to arouse the ire of the hunter. Nature Magazine has already been thus described. It probably will be again and again. It is, however, our firm belief that such intolerant and false statements eventually defeat themselves. The fair-minded sportsmen—and they are increasing in number—have the intelligence to recognize the fair basis of our views, even though they may frequently not agree with our conclusions.

Since the American Nature Association has, through this section of NATURE MAGAZINE, taken an increasingly militant stand on conservation issues, it is pertinent to reiterate our fundamental attitude. We *do not* contend that the hunter should no longer hunt; that predator control may not often be proved to be necessary; that hunting and fishing intelligently and fairly practised are not a proper part of our recreational life. We are not prohibitionists. We *do* contend that the non-hunter has a co-equal right with the hunter to the wildlife of this country. We do not concede to the hunter the right to destroy any species or reduce it dangerously, and we expect from all sportsmen a tolerant attitude toward those interested merely in observing and photographing wildlife. We will print the truth of conservation problems as we find them. We will try to draw our conclusions on a basis of that rare attribute—tolerance. If this be prohibition or sentimentalism in the eyes of those who miscall themselves sportsmen, then it is time for them to clean house.

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## MONEY TO ENFORCE WATERFOWL CLOSED SEASON AVAILABLE

One of the favorite arguments of those who attempt to justify their opposition to a closed season for migratory waterfowl is that it cannot be enforced; that there is not a sufficient warden service. There is no reason why there should not be ample warden service. The Congress of the United States has authorized the President to spend some four billion dollars for work relief. By the very fact that some of this money may be used for perpetuation of the Civilian Conservation Corps and other conservation purposes, it may also be expended for wildlife protection. As many wardens as are needed could be given employment to enforce the closed season. There would be no need for equipment so that they could do their job, and all of the money thus expended would go directly for work relief. If those who profess a belief that the closed season would be fine, but fear it could not be made effective, really mean what they say they can serve our wildlife best by urging the provision of work of this sort.

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## FLORIDA'S WATERFOWL

From the Biennial report of the Division of Game and Freshwater Fish, 1933-1934, pages 23-24, we quote the following:

"Florida's supply of these birds, particularly of wild ducks, has shown the result of the general reduction in the continental flock. Reports from sportsmen in the Fourth District were to the effect that those going out for ducks more frequently brought back coots, so few ducks being found to shoot. From the First District comes the report in a number of sections that ducks were scarce. The warden employed by the National Audubon Society to patrol the waters out from Tampa reported that where it was customary to see thousands of ducks only a few hundred were observed during the season just past. In the lake section around Tallahassee, lying partly in the Third District and partly in the Second, an area that has ordinarily afforded some of the best duck shooting in the State, sportsmen, without exception, have reported a marked shortage of these birds. Many of Florida's leading sportsmen have expressed themselves as favoring a closed season on ducks.

"Without a doubt the most serious situation in the bird world today, the one that has been the subject of more controversial discussion in this field, is the question of steps that should be taken to save the fast diminishing supply of ducks in America. The seriousness of the situation is everywhere acknowledged. The matter of controversy is as to needed measures for saving these birds.

"There is a strong and growing sentiment throughout this country, shared alike by naturalists and thousands of leading sportsmen everywhere, that absolute protection must be given ducks until they shall have rebuilt the rapidly declining supply, if ducks are not to be numbered among the 'lost species' of the bird world.

"There is a movement on foot to secure a moratorium of one year on duck shooting. Such a movement is the only sure guarantee that can be offered. This matter will be handled by Federal authorities, and Florida stands ready to support such a regulation, should Federal authorities deem such a measure needed."

LIKE A STAGE SETTING OF A PLAY LAID IN PURGATORY

PHOTOGRAPH FROM U. S. FOREST SERVICE

The sad results of erosion following upon the removal of the surface cover. A few small peaks with top soil remain among the deep valleys made by the unrestricted waters

# The Soil and Civilization

When President Roosevelt signed the bill providing for a permanent Soil Erosion Service, his action served to emphasize our greatest conservation tragedy—the progressive wasting away of our lands.

What we have done in the wholesale butchering of our wildlife is a blot on our national intelligence. What we have done to our rich heritage of forests is a sorry story of incompetence and short-sighted greed. But what we have done and are still doing to the soil itself, the great mother of all our resources, is proving the costliest blunder of all.

Faster than any nation or any race that ever existed we have been destroying the fertility of our soil. For a little more than two hundred and fifty years we have been using this land of ours, and the greater part of it for less than seventy-five, yet the area once cultivated and now essentially ruined already amounts to nothing less than one hundred million acres—roughly equal to the combined extent of Illinois, Maryland, Ohio, and North Carolina. The cost to us of land worn out and devastated each year totals at least $400,000,000, which even in these days of gargantuan donations is still a very tidy sum. It means at least three billion tons of solid material washed out of the fields and pastures in America every year. It means more than four hundred million tons dumped into the Gulf of Mexico annually by the Mississippi alone.

From a thick, rich carpet of prairie grass, belly-high to one's horse, the lands of the public domain have been allowed to waste away until over large areas grasses and herbs palatable to grazing animals have totally disappeared. Unrestricted grazing has removed all vegetative cover and allowed the soil itself to blow away or wash away beneath every heavy storm. The plants themselves have been so heavily grazed that no seeds could be produced, and with this depletion has come an appalling wastage of soil by erosion. Progressive cutting of gully after gully has transformed this entire country from a richly productive region to a shambles of winding gullies and shifting soils. Year after year the process of destruction multiplied, but we never raised our hand. We needed some startling event to dramatize this spectacle of prodigality. We got it.

On the 11th of May, 1934, a dust storm obliterated the sun over a great portion of the United States. Then and there we were having notice served on us that the time to pay the piper was not far away. Such a thing had never happened in America. It was a historic event, that dust storm, perhaps of greater ultimate significance to this country than the landing of the Pilgrims or the signing of the Declaration of Independence. And since then those "dry blizzards" are not becoming less frequent or less severe.

For years we had had before us examples of soil erosion. We had seen farms ruined, roads destroyed and grazing lands changed to dust holes. Yet in spite of these well known processes of soil motion and soil washing, we have played the ostrich to the extent of building

millions of dollars worth of reservoirs. We have done this in the face of common knowledge that important reservoirs of the West have been silting up at an alarming rate. Conservationists such as Leopold and Bennett have pointed out that dozens of irrigation projects "protected" by a headwater patch of National Forest have begun to choke with silt before the ink was dry on the bonds. In New Mexico the Elephant Butte Reservoir, estimated to have a life of 220 years, will be useless at the present rate of silting within about sixty years. The Harding Reservoir, in California, filled with silt from one single rainy period following a serious fire on the watershed.

So the story goes. Now in the eleventh hour the present Soil Erosion Service is created to prevent future wastage of our soil. Here for the first time in the history of our country is a plan-wise attempt at large-scale, comprehensive erosion and flood control projects. Already it is combating erosion and the evils of stream and reservoir silting on approximately twenty-seven million acres in twenty-seven states. And this is only a start.

PHOTOGRAPH FROM SOIL CONSERVATION SERVICE

**COMPLETE LAND DESTRUCTION IN THE NAVAJO COUNTRY**

Below, badly eroded area in eastern Utah. This was once grassy meadow land. All top soil is gone

The new Bureau faces a Herculean task. It must join battle against increasing floods, against social disorganization and wildlife depletion. Its creation is as significant a step as the creation of the National Forest System. Already the new Service, under the head of H. H. Bennett, one of the pioneer leaders for soil conservation in the United States, is gathering about it a nucleus of scientists and administrators.

Those who have labored in the field of conservation long enough to acquire a background and lose a few cherished illusions have come to realize that in this task of rebuilding our depleted resources a happy beginning is not enough. Eternal watchfulness is the price of all conservation progress. There are inevitable set-backs, there are the ever-present dangers of predatory interests, politi-

PHOTOGRAPH FROM U. S. FOREST SERVICE

cal barriers, public apathy, inefficient public servants, and the rapacity of the spoils system. That is why this first real attempt to undo the greatest conservation scandal of our time should be watched with jealous eyes by everyone interested in conservation. Its creation puts squarely on the shoulders of all conservationists the responsibility to see that the new Soil Erosion Service remains unhampered by frog-pond politics, and is not allowed to degenerate into a grab-bag for deserving politicians. And the essence of the problem is time. In spite of past butchery we can still bring back our wildlife; in spite of forest fires and destructive lumbering we can still regrow our forests; but once we destroy the soil, the great nurturing mother of them both, we are in pitiable straits indeed. When that time comes we shall be on our way to join the great ghost civilizations of the past.

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# A Moratorium on Waterfowl Shooting

A FEW months ago there was organized in St. Paul, Minnesota, the Midwest Conservation Alliance. It seems to have been born with a realization that under our present system of game conservation our stocks were steadily and rapidly dwindling, and a determination that new and definite and drastic measures must be adopted to check the appalling rate of decrease. It is not the first time that salutary movements to combat wildlife devastation have received decisive help from the middle west.

The immediate objective is a one-year moratorium on the shooting of waterfowl.

Prominent in the initial undertaking were Cyril W. Plattes, just out of the St. Cloud, Minnesota High School, and two other high school boys, John J. Tessari and Clifford B. Sakry. Their first work was in cooperation with the Minnesota Game Protective League, of which that veteran sportsman, Sam G. Anderson, is president. Mr. Anderson is well known as a vigorous defender of wildlife, and has been especially prominent both as a writer and as one of the few members of the Advisory Board, Migratory Bird Treaty Act, who have definitely and fearlessly defended the birds on all occasions. With the help of his efforts the Minnesota League accepted the point of view of the youthful group, and Plattes became its secretary.

Aided and encouraged from many quarters, the young enthusiasts have continuously carried on, and their success has been phenomenal. It may be asked how it came about that these young men, without any background of long experience, could make headway against the tremendous forces that always beset any effort to reform conservation methods. But the honest conservationist needs only a clear and logical mind, an ability to interpret his own observations, and an enthusiasm for his work, to dissect the maze of lies, obscured by the fog of words and figures, that are daily presented in myriad forms by enemies of wildlife, and to visualize clearly the true picture, the distressing plight of the helpless victims, and the obvious remedies. This picture once revealed, he knows what is needed. These young men came and saw, and, given the help of the true conservationists of the country, they will conquer.

The Midwest Conservation Alliance is appealing to every individual and every organization interested in wildlife to work for a closed season on shooting this year. The responses have been most encouraging.

The National Izaak Walton League, at its annual convention in April, voted almost unanimously for a closed season on waterfowl. Minnesota is unanimously and enthusiastically favorable to closing. From about a dozen cities in Wisconsin were received appeals to stop shooting. North Dakota responded favorably almost without dissent. From the Sioux City, Iowa, Wildlife Conference came a deluge of petitions. Montana is joining the fold. South Dakota, Michigan, Missouri, Nebraska, Illinois and Indiana are responding, with varying degrees of enthusiasm. From New York, Georgia, California and other distant states have come many unsolicited favorable responses. Nor has Canada proven cold to the appeal. Through the Saskatchewan Game League of Moosejaw have come many favorable responses, and Manitoba and Alberta are falling into line.

All this, of course, does not mean that victory will be won without continued and vigorous effort. Tremendous influence is being waged to continue the shooting of waterfowl as long as money returns are forthcoming on the "investments" in this "industry". Thousands of gunners, old and young, are determined that they will not give up their sport, regardless of what may happen. But every lover of Nature in any form owes it to himself and to his children, actual or prospective, that he encourage this movement. Anyone who can help by voice or example, or by the written word, will aid in a measure that has the approval of such national organizations as the Izaak Walton League, the National Audubon Association, the Emergency Conservation Committee, the Permanent Wildlife Protection Fund, and the American Nature Association. Many other organizations vitally interested in the well being of our harassed wildlife, will be with you.

Under the provisions of the Migratory Bird Treaty Act, the Bureau of Biological Survey, through the Secretary of Agriculture, is responsible for the protection of our waterfowl. "The Secretary of Agriculture is authorized and directed, from time to time, having due regard to the zones of temperature, and to the distribution, abundance, economic value, breeding habits, and times and line of migratory flight of such birds, to determine when, to what extent, if at all, and by what means, it is compatible with the terms of the convention to allow hunting—of any such bird."

Could any officer of our Government ask broader powers, or wish for more definite responsibility, in the duty of protecting a valuable public resource?

CORMORANTS AND PELICANS ON LOWER KLAMATH LAKE IN 1905

This lake was entirely dried up by the Reclamation Service in 1920 and today it is a barren alkali waste of no economic value. The destruction to bird life was tremendous

# Reclamation vs. Conservation

*By* WILLIAM L. FINLEY

*Field Naturalist of Nature Magazine*

*Photographs by Finley and Bohlman*

MAN has a peculiar habit of building something with his hands and, at the same time, kicking it to pieces with his feet. In no direction is this more graphically illustrated than in conservation and use of natural resources. With grandiloquent inconsistency we move to conserve or develop one resource while, at the same time, we are destroying another. This is, no doubt, all a part of man's imperfection, and is comparable with his inability to avert war or solve, with his vaunted intelligence, the problems of a changing social and economic order. No more graphic example of this can be found than the destruction in the name of reclamation of important areas in southern Oregon and northern California. The history of Klamath, Tule and Clear Lakes should establish the vital need of coordination to achieve a wise plan of land use. The absence of such a broad-gauged program has cost dearly in wildlife resources, with scant economic or agricultural benefit. The destruction done can never be repaired.

In the early days of this country these lakes and their adjacent marsh lands supported uncountable numbers of ducks, geese and wading birds native to the West. They served as nesting and rearing regions for some, or as ideal resting places for other birds on their migratory flights. In recognition of this, these areas were (in large measure) set aside by Presidential proclamation as waterfowl reservations. Their administration was left to the Biological Survey, whose rights, however, were secondary to those of the Reclamation Service, should the latter choose to invoke them.

A SCENE THAT IS NO MORE

Caspian terns, Farallone cormorants and white pelicans on the Klamath Lake Reservation, now gone

It was the war in Europe that finally helped to bring about the doom of the waterfowl. The warring nations clamored for food. To provide it greater areas had to be planted to wheat and other crops. A frenzy of reclamation set in. Promoters and producers contested for land. Regardless of whether the soil was equipped to produce crops,

BIRDS AND CATTLE
DO NOT MIX WELL

Stock grazing on a Federal waterfowl reservation under permit of the Reclamation Service. Below, white pelicans on the Clear Lake Reservation in 1912. Several large pelican colonies have been destroyed and in 1934 only one of them remained

waters were drained off and the land turned, with widely varying success, to the growing of crops. The mirage of economic value quickly faded, leaving areas from which the Reclamation Service has since persisted in trying to derive some benefit. Such meager returns as have been gained are minute when compared with the tremendous loss in wildlife resource.

Lower Klamath Lake, for example, was ceded to the Government in 1904 and 1905 and proclaimed a Federal wild bird reservation in 1908 by Theodore Roosevelt. Eighty thousand acres of shallow water and vast tule marshes made it one of the greatest wild fowl refuges in the United States. Soil analysis and subsequent experiments proved that the soil was useless for agriculture. Yet, in November, 1917, the Reclamation Service contracted with a land promotion company, diked the channel from the Klamath River and cut off the water. The lake dried up. Today it is partly deserted and partly tenanted by destitute farmers.

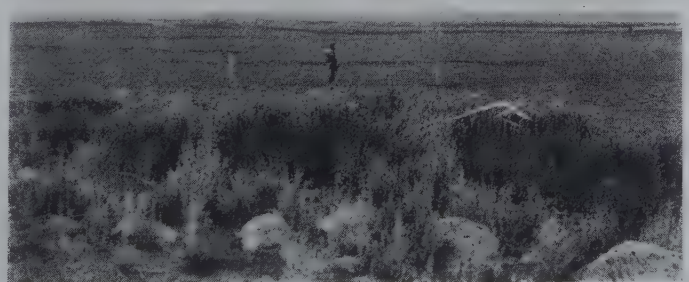
However, irreparable as was the damage done on Lower Klamath Lake, policies still in vogue with the Reclamation Service on Upper Klamath Lake, Clear Lake, and Tule Lake perpetuate the destruction of wildlife without adequate justification in terms of irrigation or reclamation benefit.

Upper Klamath Lake is a reclamation reservoir in southern Oregon. Its open water and tule patches, and some five thousand acres of land and marsh, are ideal for the feeding and nesting of waterfowl. The land, however, is leased by the Reclamation Service to stockmen without restriction as to the number of grazing sheep and cattle. The animals trample and crop the grass needed by the birds for food and cover, resulting in the destruction to bird life. For the grazing privileges insignificant revenue is received by the Reclamation Service. In fact, that bureau is performing a service not properly a part of either reclamation or irrigation when it issues permits to stockmen.

Clear Lake, in Modoc County, California, twenty years ago supported an unequalled abundance and variety of bird life. It was established as a Federal wildlife refuge in 1911. Across Lost River, at the outlet of the lake, the Reclamation Service built a dam, and a ditch to draw off more water. Only a small portion of a lake, once eight miles by ten, now remains, and the water level has been lowered beyond any value for irrigation. As the water level receded, birds fed and nested in the vegetation until the Reclamation Service leased more than 14,000 acres at an average of 22 cents an acre for grazing. Now, during the breeding season, flocks of sheep tramp through the nests and destroy the cover.

To prevent further destruction of bird life, the Biological Survey has built fences across points of land near the lake to keep out the stock. The result is that while the Reclamation Service receives money for grazing leases that destroy wild life, the Biological Survey must spend fully as much to preserve a small portion of the area as a sanctuary.

Tule Lake in northern California, once fifteen miles long by eleven



ON CLEAR LAKE RESERVATION

Fence built by the Biological Survey to keep grazing cattle out of Canada goose nesting ground

miles wide, has suffered in similar fashion. The west side of the whole northern border was a vast tule marsh and a natural wild fowl breeding area. Taken over by the Reclamation Service, this section was diked and has been taken up by settlers. The southern half of the area was designated as sump area to care for the water from the northern part after irrigation. About ten thousand acres in the center of this sump region has been proclaimed as the Tule Lake Wildlife Refuge, in 1928. The Reclamation Service leases the lands on three sides of the Refuge for settlement, or, at a low rental, for hay and grain crops. In addition, in 1933, it began renting the area within the sanctuary to stockmen and cattle have been turned into the refuge, and destroy the food and nesting sites of the birds. The revenue is small; the damage to bird life large. The concentration of ducks and geese about Tule Lake has increased with the drying up of many lakes in southern Oregon, and enlargement and complete protection for the Tule Lake Refuge is sorely needed.

Thus, at a time when agricultural production is being curtailed by government edict and bounty; when the Biological Survey is engaged upon a program of restoring land, otherwise useless, to its natural wild inhabitants; and when our ducks and geese are dangerously reduced in numbers, we find programs unjustifiably destructive to wildlife carried on by another branch of the government. Practical common sense dictates the cancellation of the leases in these important regions, the cessation of destructive grazing and the restoration of these areas to the purpose they most efficiently serve—wildlife protection and production. Certainly this is a reasonable demand.

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Three bills pending before Congress propose the creation of new National Parks. They have the endorsement of the Park Service. All three merit enactment into law since they would preserve areas outstandingly worthy of preservation. These are H.R.7086, for the establishment of Mount Olympus National Park on the Olympic Peninsula of Washington; S.2289, for the creation of Kings Canyon National Park in California; S.2131 and H.R.6373, to set aside about 1,500,000 acres in the Big Bend country in Texas.

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The New York City Federation of Women's Clubs, with a membership of about 100,000, has adopted a resolution in favor of a closed season on migratory waterfowl and endorsing the principles contained in the Berlin Bill.

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The action of Governor Lehman of New York in vetoing the bill providing for making so-called "improvements" atop Whiteface Mountain in the Adirondacks wins the applause of all who resent the continued sad efforts of man to improve on Nature.

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It is announced by the Biological Survey that permits will no longer be issued for the taking of waterfowl or their eggs for propagation owing to the fact that "the breeding stock of wild birds is much too low at this time to justify risking any portion of it in the hands of inexperienced persons." We trust that before the waterfowl shooting season of 1935 arrives the Biological Survey will also have had the courage to declare that the breeding stock is also too low to sustain another disastrous hunting season.

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An interesting pamphlet entitled "4-H Club Guide in Wild Life Conservation" has been written by Floyd A. Johnson and published and distributed by the South Dakota Game and Fish Department. This is a sane and constructive document and a distinct credit to the State of South Dakota. It could be read with profit by other Game and Fish Commissions.

A recreation State with a large tourist traffic at stake, Maine has at last recognized the menace of the rural billboard through the enactment of a license law requiring permits for billboards, providing certain restrictions as to proximity to the highway, to intersections or points of public interest. The law is a splendid start at solving this serious problem and is a credit to the State.

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The National Association of Audubon Societies has gone on record in favor of protection of hawks and owls, against the killing of any hawk or owl other than individual birds known to be damaging property, against bounties, against the pole trap.

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Two recent pamphlets issued by the Emergency Conservation Committee, 734 Lexington Avenue, New York City, are significant and valuable contributions to conservation literature. One of these is entitled "Where Do You Stand on the Matter of Shooting?" and is a sane statement by L. Raymond Talbot, president of the Brookline, Massachusetts, Bird Club. It deserves wide attention. The second pamphlet asks the question: "Is It 'Good-bye' to America's Waterfowl?" and Dr. William T. Hornaday is the questioner. The answer rests with Jay N. Darling and the President of the United States.

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"Mr. Walt Jamison, Glenwood, Iowa," reports *Outdoor Iowa,* "has found out how many cats roam over his orchard. Early in the winter he put out five box traps to catch rabbits that were girdling his fruit trees. He says: 'In the last two months I have caught and killed 36 cats and there is no question about them not eating the wild birds, as one of them ate too much fat meat (the bait in the trap) and became sick, disgorging a cardinal it had just eaten. We had a fine covey of quail that were raised on the place and I had been feeding them since they were the size of a sparrow, but they have all disappeared. I believe the cats cleaned them up. I know they catch the young squirrels. I never see cats in the daytime, wouldn't know there was one in the country, but they work all night and take an awful toll of wildlife.' "

K.D.F.
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# The Phantom of the Mangroves

## *The great white heron is in desperate state*

*By* ALEXANDER SPRUNT, Jr.

*Supervisor of Southern Sanctuaries, National Association Audubon Societies*

THERE is, perhaps, no bird in North America so thoroughly and systematically persecuted as is the great white heron, *Ardea occidentalis*. Confined in our territory almost wholly to the Bay of Florida, its innumerable keys, and nearby places, it is one of our most restricted species. Its entire breeding habitat embraces an area of hardly more than one hundred miles by fifty. Because of this fact, the steady and relentless inroads that are being made upon its numbers, now seriously threaten its existence. Its desperate state demands prompt attention if it is to continue as a North American bird. To neglect it would be a crime.

A GREAT WHITE HERON

Its greatest enemy man, this bird faces the danger of extinction from the killing of the young

The largest of the heron tribe in North America, the great white is well and descriptively named. It is large, measuring some four and a half feet in length, and it is immaculately white from the egg to death. Those who have visited that enchanting region, the Florida Keys, whether bent on fishing, sight-seeing or business, can scarcely have failed to note the commanding presence of this stately bird. Amid the jade waters, the dark green of the mangroves and under the amazing cobalt tropical sky, it stands out like a snowy lighthouse, easily visible for great distances.

Whether viewed from the aerial pathway of the Pan-American clippers, the bridges and causeways of the Over-seas Highway, or the speeding trains of the Florida East Coast Railway, the great white heron will remain in one's memory of that fascinating world of land and water as one of the outstanding bits of animated Nature. Its passing would be a calamity.

Recently the writer, in connection with his work with the Audubon Association, investigated the condition of this fine species in its native haunts and found that reports of its alarming status were not exaggerated. Though it is perfectly possible, and indeed easy, to see these herons from motor-car, train or plane, it is an entirely different matter to look upon their home life.

Deserting the mainland entirely for their domestic duties, the great whites resort to the keys to nest. From tiny spots of semi-submerged land, supporting a bare half dozen straggling mangroves, to those of many acres in size, the keys of Florida Bay are intensely interesting, if extremely difficult places to examine. Indeed, many of them present to the investigator not as much a problem as an impossibility, for the amazing tangle of mangrove roots and stiff branches, together with the treacherous footing afforded by the white mud, makes landing a real problem. Frequently one will be obliged to anchor a half to three quarters of a mile from a key and land by means of a skiff, or by wading, for the average depth of the Bay is but three feet!

Though disappointing to the investigator who yearns for such concentrations as characterize the egrets, ibises and smaller herons of the Everglades, the comparatively solitary nesting of the great white is probably the reason for its being existent today. The Bay of Florida is large and with two pairs nesting on this key, half a dozen on that, and less than a hundred on any, the birds are well scattered over a great territory, with the result that their greatest enemy cannot easily find all of the nesting places. Conversely, this makes their protection more difficult!

Natural enemies of the great whites are few, or non-existent. The one great menace to its continued status as an American bird is . . . Man. Although some of our ablest ornithologists have stated that they do not consider the great white a rare bird, or likely to become so, the writer cannot concur in this belief after seeing what is going on today in its nesting grounds. The adults are practically unmolested. Even the collector has great difficulty in securing specimens, not only because of the wariness of the birds and the inaccessible nature of the country, but due to the stringent restrictions now in effect in Florida as regards collecting permits. The bird's real danger lies in the relentless persecution of the species by the taking of the young by spongers and others, for food.

In few localities is any game bird as eagerly sought as are young great whites in Florida Bay! The difficulty of penetrating the nesting grounds are as nothing to the

natives who, by the way, are known under the term of "conchs", a name originally applied to the Bahaman negroes, but now widened to include the West Indian and Floridian spongers. No amount of trouble or inconvenience seems to be too great if young great whites are at the end of the trail, and they will be secured if a whole key has to be razed with machetes.

The sponge boats are frequently out on voyages lasting from four to six weeks without a port being touched. They provide against these protracted excursions by laying in a stock of staple groceries and the like but they take little or no fresh meat. For this they depend on the country, and that means the young white herons. Although pelicans and cormorants are not scorned, the heron is the prime favorite and the others are taken only when the latter is not available.

Landing on a key where the birds are nesting, the "conchs" methodically proceed from nest to nest, taking the almost fully grown young and, beyond the immediate need for meat, salt them down in barrels for future use. If they find that a certain key has birds not in the right stage of growth, it is revisted later when the young are then secured and the population thus wiped out. This is the principal menace that faces the birds, and it is a serious one.

Though this has been going on for years, it is only recently that this persecution has had such disastrous results. That alarming inroads have been made is evident even to the casual observer in Key West, many of whom the writer interviewed. Several recalled the time when two and three hundred great whites nested on a single key. None knew of any such concentration now. Many knew of keys where half a dozen to twenty pairs still nest but they remarked upon the noticeable falling off in these colonies compared with a few years ago. One of Key West's most prominent citizens confidently assured the writer that another five years of these present "goings on" would see the end of the great whites.

As significant as such evidence may be, first hand investigation is always desirable, and a survey was undertaken for the Audubon Association by the writer. Through the cordial co-operation of the United States Coast Guard, the Bay of Florida was surveyed from the air, Lieut. C. B. Olsen, Commander of the Miami Base, personally flying the writer for three and a half hours above the keys. Without this flight the survey could not have been made a success.

The entire Bay was traversed and zigzagged from Barnes Sound west to the Snipe Keys and from the line of the Florida East Coast Railway to Cape Sable, approximately three hundred and sixty miles being flown. On every key where a number of the birds were noted, the plane descended to a low altitude and banked about the key until an accurate count was made. Three concentrations were noted, each consisting of about twenty to twenty-five pairs. Certain keys lying a little to the north and west of Big Pine Key, and a small spot some few miles south of Flamingo on the mainland, were charted as such points. A total of only two hundred and eleven great white herons was observed by examining the entire Bay.

Naturally, many keys were seen only from a distance and not actually flown over. Likewise, those west of the Snipe group and north of Key West were not examined. These, however, constitute the minority as compared with the territory covered and are, indeed, not strictly in the Bay area. The writer believes this to be the first flight ever taken over the keys with the express object of studying the status of the great white heron, and it is therefore not possible to compare his figures with any others.

Following these observations, the writer proceeded to Key West by automobile, seeing only three great whites by the way, and secured a boat and a guide who knew the birds and the country. Two days were then spent in the Bay visiting the concentration points spotted from the air. At one of these spots, on one key, forty-two nests were found and examined. Every one was empty! Many gave evidence of having been occupied recently, but whether the young had flown or had been killed by "conchs" was hard to determine in every instance.

On another key, some miles away, a nest of fresh eggs was found, an indication that the devastation on the more populated key was due to human interference. On the third concentration point, a key south of Flamingo on the mainland, twenty-one recently occupied nests were found. In three of them, a single almost fully grown young was seen. All of the others were empty with four exceptions, these holding the remains of dead birds. The guide who conducted me assured me that the great whites had never rested there before, and since he was a resident of Flamingo, he knew whereof he spoke.

One highly significant fact was apparent. Between all the nests there were rude trails beaten, the vegetation being cut and broken with some sharp instrument! On this key the walking was much less difficult than any upon which the writer landed and it was plainly evident that this had been taken advantage of by earlier visitors with sinister intent. Its proximity to the mainland makes access to this key easy.

The Audubon Association, in its plans for the enlarging of the warden service in south Florida, intends to include this key in a regularly patrolled area and since it seems to be a newly-occupied nesting place, it is evident that the birds are resorting thither from some other spot where they have been persecuted. If such is the case, and this new nesting ground is protected, there is every reason to believe that it will become an important concentration center and stronghold for the white heron.

# The Chief Forester Voices His Creed

MR. F. A. SILCOX, Chief Forester of the United States, recently placed before the Society of American Foresters the following six-point creed. These were his points:

1. The primary objective of forestry is to keep forest land continuously productive. This must take precedence over private profit. Forest devastation is no longer excusable anywhere.

2. Forest devastation must stop, and forest practice must begin now, not in the nebulous future. Tomorrow will be too late.

3. Public control over the use of private forest lands which will insure sustained yield is essential to stabilize forest industries and forest communities. The application of the required practices on private lands must be supervised by public agencies and not be left to industry.

4. The Federal Government and the States should greatly increase their ownership of forest land, including merchantable timber, both in the East and in the West, for the purpose of creating sustained yield units suitable for immediate utilization.

F. A. SILCOX, CHIEF FORESTER OF THE UNITED STATES

5. The Federal Government or the States should undertake the logging and if necessary the milling of their own timber where this is desirable for the maintenance of existing communities, the creation of permanent employment, or the production of cheap material to supply local needs.

6. Long-term credits should be made available to forest industries through Government agencies only on the condition of sustained yield forestry under Government supervision. In case of failure to meet either the financial or the forestry obligations, the Government should be empowered to take over the land and manage it as a National Forest.

Mr. Silcox does not believe in compromising on the subject of forest destruction. His first two points are something that we have frequently heard before, but never more definitely stated or sincerely meant. The new thought which Mr. Silcox brings out is found in his third principle, namely, an emphasis upon the value of forest communities and perpetual crops of timber not so much for the sake of the product as for the sake of stability of employment and community life. Formerly the justification for stopping forest destruction was founded upon the idea of a possible wood and forest products shortage to be suffered by future generations. Now we find a more immediate and practical justification on the ground of conserving human resources. Mr. Silcox feels that this human element in the situation is in itself a sufficient justification for public supervision or even public regulation of forest cutting.

In his fourth principle Mr. Silcox reiterates the gist of the previously announced Federal policy to greatly expand public ownership of forest land. Probably all conservationists will concede that a certain proportion of our forests should be in public hands, but whether this should be greatly increased, what portion should be private, and what publicly owned, is still a bone of contention. There is a distinct possibility of overdoing the attitude of laying all our problems in the lap of government.

With his fifth point the Chief Forester has drawn fire from many foresters who are unwilling to advocate logging of forest lands and selling of the forest products by Government. In a later speech Mr. Silcox clarified his position, stating that he did not propose to embark on competition with the lumber industry, and that sawmilling or other manufacturing justification for Government operations can be found only in exceptional cases.

The sixth principle, strictly speaking, is not a principle at all, but more a means of securing what these other principles advocate. It is the stick of candy offered to each good little timber operator who promises to learn his lesson and never be late for school.

Not all foresters, economists or conservationists are going to agree with Forester Silcox's credo. Many persons believe that he is too much of a Federal-regulationist with too great faith in Federal bureaucratic administration. That a man of these tenets should now hold the position of Chief Forester is inevitable and natural. The important thing is that Mr. Silcox has emphasized a new close connection between forests and human welfare, and that he has broadened the economic scope of forestry to include not merely the production of forest products for human use, but also the utilization and operation of the forests themselves as a permanent means of human livelihood. He emphasizes that forestry is not an economic problem, but a social problem and that true conservation is not merely a matter of tree growth and soil productivity, but must concern itself primarily with human welfare.



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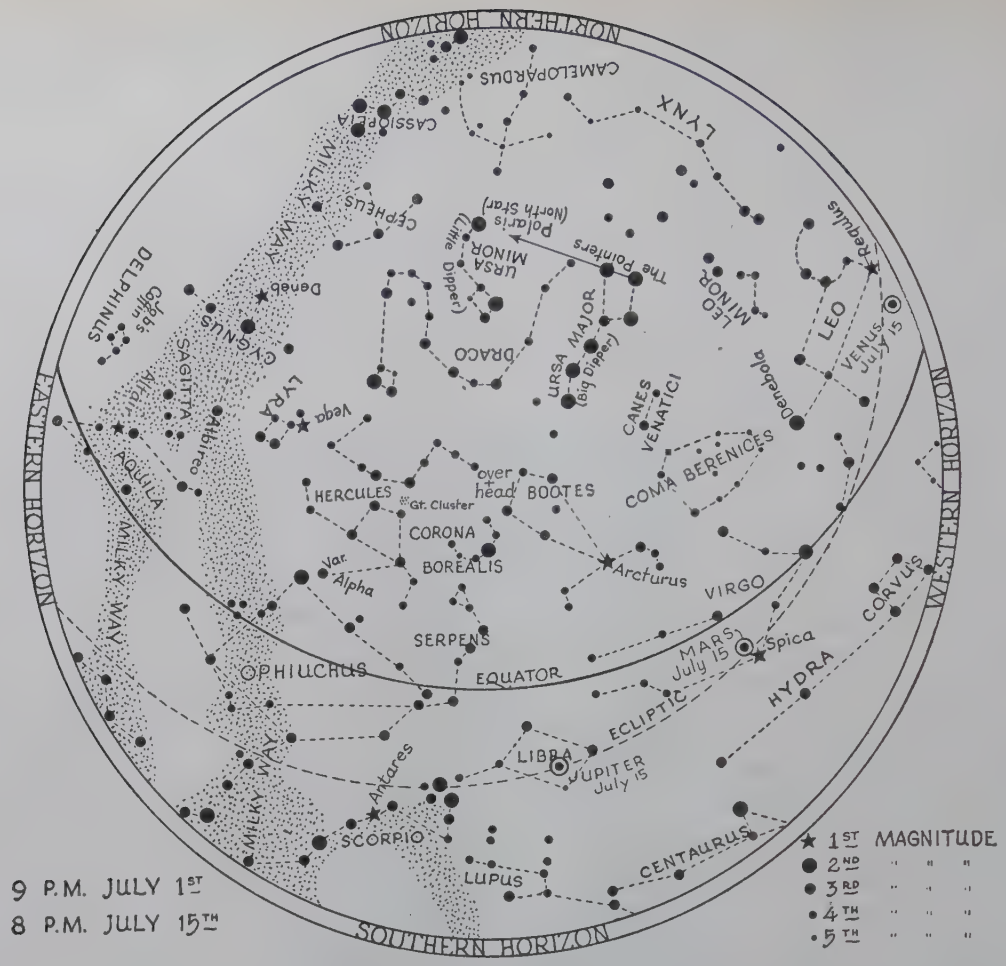


To use this map hold it before you in a vertical position and turn it until the direction of the compass that you wish to face is at the bottom. Then below the center of the map, which is the point overhead, will be seen the constellations visible in that part of the heavens. It will not be necessary to turn the map if the direction faced is south

# Moon Eclipse in July

*By* ISABEL M. LEWIS

ONE of the finest astronomical events of the year will be the total eclipse of the moon which will occur on the night of July 15-16, and will be visible from *more than half* of the earth's surface. On account of the turning of the earth on its axis, additional portions of the earth's surface are brought within view of the moon during the eclipse. This event, from beginning to end, will last nearly five and a half hours.

North and South America, except the extreme northern part of North America, will be best placed for the observation of this celestial show, although it will also be visible, wholly or in part, from most of Africa, southwestern Europe, the Atlantic Ocean and the eastern part of the Pacific.

The moon will be seen in different positions with respect to the horizon according to the position of the observer, but the different phases will occur everywhere at the same instant of time and the observer need only apply the correction for longitude to obtain the local time at which the eclipse will begin and end in his locality. This is not true of eclipses of the sun, and to predict the time of occurrence and magnitude of a solar eclipse at any one place is not a simple matter.

It will be 9:15 P.M. on July 15 in Eastern Standard Time, or an hour earlier in Central Time and three hours earlier in Pacific Time, when the moon will enter what is known as the earth's *penumbral* shadow within which an observer on the moon would see the sun more or less partially eclipsed by the earth. As the moon penetrates farther and farther into this shadow the gradual darkening of its surface increases until at 10:12 P.M., Eastern Time, the *umbral* shadow of the earth touches the moon and an observer at that point of contact on the moon would see the sun then completely disappear from view behind the earth. From this time on more and more of the moon's surface passes into the *umbral* shadow which we, who are on the side of the earth turned toward the moon, see slowly advancing, intensely dark by contrast with the bright portion of the lunar surface, across the face of the moon from east to west. By 11:09 P.M.,

Eastern Time, all of the moon's surface will have passed completely into the shadow of the earth and the total phase of the eclipse will begin. It will last for one hour and forty minutes, which is within four minutes of the maximum possible duration of a total eclipse of the moon. At nearly 12:50 A.M., July 16, Eastern Time, the total phase of the eclipse will end and the moon will gradually emerge from the earth's shadow, leaving the umbra at 1:47 A.M. and the penumbra at 2:43 A.M. If an eclipse of the moon is *partial* the moon is not immersed completely in the earth's shadow but passes either north or south of it, dipping into it only partially.

In the July eclipse the moon will pass almost centrally through the shadow of the earth. The diameter of the moon is about 2160 miles and the width of the earth's shadow at the point where the moon passes through it is about 5850 miles. The distance of the sun from the earth at the time of this eclipse will be about 94,419,000 miles. The shadow cast by the earth will be cone-shaped with its base, a cross-section of the earth through its center, nearly 8000 miles in diameter and it will, of course, be directed away from the sun. The tip of this shadow-cone will lie about 865,845 miles beyond the earth, and, as the moon at the time will be about 226,740 miles from the earth, the shadow will extend about 639,100 miles beyond the moon. The width of the earth's shadow at the point where the moon's orbit passes through it in this eclipse, is nearly its maximum possible width, and therefore the total eclipse has nearly the greatest duration possible.

It is safe to predict that during the total eclipse when the moon is completely immersed in the shadow of the earth it will not disappear from view but will shine with a strange, coppery light. This comes from the fact that the light from the sun shines through the earth's atmosphere and is refracted into the earth's shadow, illuminating the surface of the moon with a weird, reddish-yellow light that is on some occasions tinged with pink and not uniform in brightness on all parts of the lunar surface.

Usually surface features on the moon can be recognized even during the middle of the eclipse. There is considerable difference in the brightness of the moon during different eclipses. The total lunar eclipse of 1884 was said to be so dark that the moon could not be photographed during the total phase. The central part of the lunar surface was described as chocolate-colored in one eclipse with the outer portions coppery and, at times, pinkish in hue. It depends greatly on the condition of the earth's atmosphere in the regions surrounding the night-side of the earth what the brightness of the moon will be during total eclipse. If the earth's atmosphere above that circular zone of its surface is more or less cloud-ladened there will be much less refraction of light into the earth's shadow and on to the moon's surface and the eclipse will be darker than average. This is a case in which weather on the earth has an effect upon the surface of the moon.

Viewed from the moon at the time of a total lunar eclipse a wonderful celestial scene is being enacted. The sun, which is visible with its corona in a sky densely spangled with stars even by day because of the absence of an atmosphere on the moon, is for an hour and forty minutes completely hidden from view, with most of its corona as well, since the diameter of the earth is four times that of the moon and covers a much greater area surrounding the sun when eclipsing it than the moon does. During this time the dark body of the earth, faintly lighted by the light refracted into its shadow and reflected back to its surface, is surrounded by a brilliant halo of sunset colors produced by sunlight shining through its atmosphere. Compared to this magnificent spectacle, which there is no one on the surface of the moon to behold, our coppery-hued satellite speeding on through the shadow of our own planet with the speed of a cannon ball shines during the total eclipse as a ghost-like reflection of light from another world.

The scientific value of a total eclipse of the moon is much less than that of a total eclipse of the sun but it may be put to two uses. Occultations of stars observed during a total lunar eclipse are of special value in fixing the exact position of the moon and in determining its diameter and distance from the earth. There will be about thirty faint stars in all occulted by the moon during this eclipse but only three or four will be occulted at any one place.

Measurements of temperature changes on the moon during the total eclipse are also valuable for they give information about the amount of heat absorbed by the surface rocks of the moon and the temperature of its surface. Since the moon is unprotected by an atmosphere it is a world of great extremes of heat and cold. During the eclipse, when the sun's rays are cut off, the temperature drops from a blistering heat of somewhere around 200 degrees Fahr. of the lunar midday to as much as 100 degrees below zero in the brief space of a few hours. The sensitiveness of modern instruments make it possible to measure these temperature changes easily and accurately.

For star-gazers this month the chief constellations visible in the early evening hours are, high over head, Lyra, Hercules, Corona and Bootes, with Cygnus and Aquila in the east, Scorpio and Sagittarius in the south, and Virgo in the southwest. The Big Dipper in Ursa Major is always conspicuous on July evenings in the northwest and Draco high above the pole. The first magnitude stars now in view are Deneb and Altair in the east, Vega and Arcturus, high above our heads, Antares in the south and Spica in the southwest.

Ruddy Mars is now close to Spica in Virgo. It will be interesting to notice its change in position with respect to Spica during the month as it passes from northwest to southeast of it, approaching very closely to it the middle of July. Venus is still a magnificent object in the west for some time after sunset. Jupiter is in Libra near the meridian in the southeast at sunset. Saturn is in Aquarius and rises late in the evening. Mercury is a morning star on July 14 but it is poorly placed for observation.

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# Trailside Treasures

## Friend Ichneumon

*By* JANE ADAMS PARKER

*Illustrated by Jex*

WHEN Grandpa Arnold, followed by Aunt Dot, Jo and Rosy, reached Jerry, they were quite out of breath from running, and quite frightened, as well, thinking something terrible must have happened. But when they turned the sharp bend in the trail, there was Jerry bending down over a little gray-brown animal with a big bushy black and white-ringed tail.

"A young raccoon caught in a trap," said Grandpa. "Who could have laid a cruel trap in our old woods?"

"I was afraid to leave him alone to run up to get you," said Jerry, "so I whistled."

"Here, put this large handkerchief over his head," said Grandpa. "How he does scold, poor little fellow. When he sees we are friends, he won't be so frightened."

Jerry held the raccoon, as Grandpa directed. Aunt Dot and Grandpa Arnold opened the trap and looked at the bruised leg. "It's only a flesh wound," said Aunt Dot. "We'll hurry back to the cabin and get him doctored up with our first-aid kit."

"He may have been caught some time in the night," said Grandpa. "Raccoons usually come out for food at night."

"Don't raccoons eat frogs and turtles and turtles' eggs?" asked Jerry, as they walked back to the cabin.

"Yes, and small birds, sometimes, and small fruits. And they usually wash their food before they eat it," said Aunt Dot. "They're pretty good swimmers, too. But they can't dive and chase their prey under water, like the mink and otter do."

After the leg had been carefully tended, the girls helped Grandpa Arnold make a soft bed in one corner of the cabin. Then they all went out and Aunt Dot closed the door.

"And so Ricky, the raccoon, joins Trailside Treasure House, until he's well again," said Jerry, dropping down on the soft moss in front of the cabin.

"My," said Jo, sitting down on a big stone, "it's so quiet here I could go to sleep." She leaned her head against an old elm tree, as she spoke, and shut her eyes.

But not for long, for suddenly Rosy began

jumping up and down excitedly, crying, "Oh, oh look out. There's a big wasp right on that tree behind you."

Jo turned quickly. "Someone give me a stick." she said, "I'll kill it."

"Kill it?" said Aunt Dot. "What for? Why she's just another one of our little friends helping the old elm tree."

"She's stinging the tree," said Jo. "She's got three long stingers."

"They're not stingers," corrected Aunt Dot. "That one in the tree is her drill. The other two that loop higher and higher over her back, as she works, are the sheaths that protect the drill when not in use."

"Most likely old Mrs. Horn-tail has been here before her," said Grandpa Arnold. "She drills holes in the bark of the tree, too, and into each hole she pushes an egg, the way Mrs. Ichneumon does. When Mrs. Horn-tail's babies hatch they'll be ugly white grubs, with small, round, horny heads and pointed, horny tails. They'll have six legs and sharp jaws that can gnaw through most anything. They'll feed on the soft sapwood of the tree until it's time for them to go to sleep, and turn into Horn-tails. Then they'll make silken cocoons and weave some of the chips they've chewed into them. When they wake they'll break open the cocoons, crawl to the end of their burrows and gnaw their way out again."

"And that's where our good friend Mrs. Ichneumon helps us out," said Aunt Dot. "She drills down through the bark of the tree, until she reaches Mrs. Horn-tail's burrow. There she lays her eggs. When her babies hatch out, they'll eat up the Horn-tail babies."

"There are many, many kinds of ichneumons," said Grandpa Arnold. "Some tiny ones that help out our cabbages. Just use your 'seeing eye', and maybe you'll find an old cabbage worm with the tiny cocoons still on his back . . ."

"Oh Grandpa," Jo grabbed his sleeve and pointed fearfully down the trail. "A BEAR!"

Grandpa Arnold laughed. "I've lived a good many years in these woods and never saw a bear. . . ." Then he stopped short. "Quick, get in the cabin, all of you," he shouted.

For true enough . . . there was A BLACK BEAR, coming up the trail towards them.

(To be continued)

# The Nasturtiums' Parasols

*By* FLORENCE H. MOORE

Within each shy nasturtium,
There surely hides an elf;
Who has a leafy parasol
To hold above himself.

For when it rains, they tilt
The parasols above their heads;
In order that the drops may fall,
Upon the whole nasturtium bed.

But have you ever noticed,
That when the sun is bright,
The little parasols are straight,
With not an elf in sight?

It may be only Granny Elf,
Who smiles when sun and rain,
Pour out their magic beauty,
On all the Earth again.

PUZZLE: Find Granny Elf and her pet Quail.

# Hiking and Camping Forum

Conducted by
ERNEST A. DENCH

**Hiking and camping inquiries will be answered by mail if a stamped addressed envelope is enclosed. Address the Forum editor.**

**While our "Let It Rain" bulletin is chiefly intended as a guide to waterproof clothing and equipment, it also indicates sources of supply of other hiking and camping goods. You can write for general catalogs to the firms whose specialties interest you. Price—a 3-cent stamp to members; 10 cents to non-members.**

## Brevities

It is expected that the Pacific Crest Trail Conference will materialize at the Pacific Coast Conservation Forum in June. Wonder on whose shoulders the important role of administrator will rest? . . . Overheard at a camp site: "A real camper has the ability to rise late. The novice tumbles out at dawn because he aches all over." Wisdom tinged with sarcasm, but what about the seasoned camper who *prefers* to remain a late riser? . . . Margaret Hey is now editor of the Milwaukee Go-Hiking Club *News*. "5800 lbs. Buffet Winds" is a brilliant caption in current issue. The 32 participants weighed themselves on a master scale when they halted for lunch on a blustery April day. . . . Vacation climbing and camping trips are offered this summer by 9 of the 22 clubs belonging to the Federation of Western Outdoor Clubs. Inter-club visits are encouraged. . . . The style-conscious hiker will wear a leather jacket with a shirred back next fall. . . . George Crowder recently engineered a mass get-together of Appalachian Trail groups in the Susquehanna River region. One hundred and thirty-four members of seven organizations were present on this week-end Pennsylvania trip. A convention on the hoof! . . . A new shelter in the Palisades Interstate Park of N. Y. and N. J. was dedicated to the late Edgar David Stone. Mr. Stone founded the Tramp and Trail Club of N. Y. in 1914. Shelter is located on the Suffern-Bear Mountain Trail, 29 long miles, with 13 mountains "bridging" terminals. Although a one-day stunt to marathoners, the trip needs two days for enjoyment. . . . Unkind comment on a western guide's shortcomings: "The leader took so long to make coffee that, in future, he should go out the night before to kindle the fire and shake up the grounds." . . . The Federal Department of Agriculture has a hiking club, while one is being formed in the Department of Labor. A soothing escape from red tape. . . . Owners of Appalachian Trail Conference publication No. 4, *Guide to the Appalachian Trail in Maine,* should acquire the 1935 Supplement, price 30 cents. New maps of interest to Maine vacationers are *Katahdin to East Branch, Pleasant River* (50 cents), and *Bodfish Siding to Moxie Pond* (35 cents). Orders to 901 Union Trust Bldg., Washington, D. C. . . . Omaha Walking Club bulletin mentions an emergency operation on the trail. A member's torn breeches were patched with white adhesive. Is this offered as a gadget tip, editor Raymond A. Raney? . . . A new section of the Green Mountain Club is located at St. Albans, Vt. R. H. Domey is president. Its Long Trail maintenance area is from the Fred Tucker camp to the Journey's End, at the Canadian border. Camp accommodations are available before one reluctantly turns back. Maybe some day there will be connecting trails from the Dominion side. . . . Dr. C. A. Phillips is the compiler of a guide to the 15 Mount Tamalpais (San Francisco) trails. The Tamalpais Conservation Club publishes the pamphlet as a service to local hikers. . . . Between August 4 and 11 Carlos C. Campbell will conduct a hike of 80 miles over the Appalachian Trail, from one end of the Great Smoky Mountains National Park to the other. Although it is a scheduled Smoky Mountains Hiking Club trip, guests physically capable of completing a hard trip, carrying food and bedding in packs, are cordially invited. Mr. Campbell's address is P. O., Box 1454, Knoxville, Tenn. . . . Truthful advertising by one club: "Out in the rural districts our leaders are the best to be had." Better not seek guide service within the city limits! . . . The Colorado Mountain Club now offers an outing schedule merging the activities of the five separate regional groups. Members may freely participate in the trips of other C. M. C. groups. It should knit the groups more closely together and give members wider choice in outings. Nothing fossilized about your club, president Garrat B. Van Wagenen, despite its silver anniversary being due next year.

## No End to Gadgets

*No. 1.* On summer hikes there is an increasing tendency to follow the luncheon sandwiches with a small can of some pure fruit juice. One packer puts out a pineapple juice in cans of five different sizes, giving the hiker-camper a wide choice. It is an unsweetened product, except for the natural sugar.

*No. 2.* Fruit drinks in powdered form need only the addition of water and sugar. Each envelope weighs slightly over one ounce, and is good for two quarts. Choice of several flavors.

*No. 3.* A free booklet of banana recipes offers some unusual sandwich combinations. It also describes how to broil bananas over the camp fire.

*No. 4.* A pocket-size metal pump is a simplified device for extracting snake venom.

*No. 5.* Last September we described the special packs made by Mr. and Mrs. Paul Stark for toting their twin babies on hikes taken with the Contra Costa Hills Club. A British manufacturer now announces a child's carrying sling, perfected by a young married rambler-inventor.

*No. 6.* A western firm uses camel's wool instead of kapok for filling in its sleeping bags.

*No. 7.* A three-in-one structure—cot beds, bedding and tent to house two adults—is offered from a southern source. The total weight of the portable equipment is 61½ pounds, so is suitable only for motor camping.

*No. 8.* A new canvas goods catalogue is available from a specialty house. Among the listings are 24 kinds of knapsacks, 19 of tents, 11 of sleeping bags, and 9 of duffle bags.

*No. 9.* An American agency has been established to handle a folding boat of British manufacture. The maker sponsors a new sport—water hiking. The parts, which fit into two bags, are easy to portage, and can be assembled in 5 minutes. Single-seater model weighs 28 pounds, and it is claimed that boat can be hauled over mountainous terrain for 4 hours without physical strain.

## Blue Ridge Guide Book

The most comprehensive of the Appalachian Trail handbooks is the second edition of the *Guide to Paths in the Blue Ridge.* For an investment of $3.00 you acquire 450 pages of text and 17 maps—some inserted; others separate. The territory is 885 miles of the A-T and side trails in Southern Pennsylvania, Maryland and Virginia. The covers are ingeniously designed to close as a blue leather wallet, provided with a snap fastener. This coat pocket-size volume should stand a lot of racket on the trail. It is a Potomac Appalachian Trail Club publication, available from 609 American Security Bldg., Washington, D. C.

## Trails and Wilderness Protection

The Wilderness Society has a unique plan of action which should appeal to conscientious hikers and campers alarmed at our fast-disappearing wilderness. It is outlined in the prospectus available from Robert Sterling Yard, 1840 Mintwood Place, Washington, D. C. Operating expenses will be met by voluntary donations.

H. C. Anderson has obligingly defined the Society's stand on trails. It will hinge on specific situations as they arise. Already the W. S. is vigorously opposed to Graded Trails, the "A" type favored by the National Park Service. Such trails are too citified for a wilderness environment.

Mr. Anderson is also secretary of the Potomac Appalachian Trail Club. His presence on the Wilderness Society's organizing committee is assurance that hiking trails will have an able and fearless spokesman. Membership is selective.

## Some Camping Wrinkles

The frisky antics of mosquitoes and midges can be curbed by hanging a doped cloth at the tent entrance. The dope consists of equal parts of four oils—tar, cedar, citronella and olive. The pungent smell may antagonize your nostrils, but you will gain peace for hours.

Their leg-nipping habit, prevalent as you move around camp, can be discouraged by tucking trouser bottoms inside your boots.

Emulate the Redskin by having camp face the east. On a summer's day you get the dual advantage of morning sunshine and afternoon shade. (Continued on page 58)

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## Outdoor Plays

We have constantly been on the lookout for good Nature plays for presentation indoors or outdoors. The available supply of such plays is limited, and most of those printed and available are too elaborate in their demands for settings and costumes. This is particularly true of indoor Nature plays, of which there appear to be few. Recently we ran across a group of plays for outdoor production written by and available from Miss Dorothy Elderdice, The Players' Supply Shop, Westminster, Maryland. Miss Elderdice is director of the drama at the local college, and will be glad to supply a catalog.

## A Turtle Island

Apparently resting from its flying on something more substantial than a casual wave, a seagull was observed from the deck of the U. S. S. *Chaumont* resting on the back of a large turtle. The observation took place off the coast of Nicaragua early in the morning of August 30, 1934. Testimony thereto is rendered by Bill Davidson, Capt. John W. Beckett, U. S. M. C., Edith Reno McVay, David C. Caldwell, Rear Admiral W. R. Shoemaker and Rear Admiral Charles B. McVay.

## Nature Poem Contest

Once again we are glad to announce the Elberta Clark Walker Memorial prize for Nature poems. Poems must not exceed 72 lines in length, must be submitted anonymously with the name and address in a sealed envelope. Only one poem may be submitted by a contestant, no manuscripts being returned. The contest closes November 1, 1935. Entries should be sent to Miss Alice Gibson, Lookout Mountain, Tennessee. Further details will be sent to those who enclose return postage.

## Film Available

Two reels of sixteen-millimeter motion picture film entitled "The School of the Forest" and showing life, class and field work at the Allegany School of Natural History are available for bookings next fall and winter. The school is conducted by the Buffalo Society of Natural Sciences and affiliated with the University of Buffalo, and offers college credits for its courses. Bookings may be arranged through the Publicity Manager, Buffalo Museum of Science, Buffalo, New York.

## Work-test Book

To accompany the new edition of *Biology and Human Welfare* by James Edward Peabody, the Macmillan Company has brought out a splendid work-test book which should be most effective in correlating the information obtained from the key text. It sells for forty cents.

## Education Week

Representatives of the National Education Association, the United States Office of Education and the American Legion have selected November 11 to 17 for the dates of American Education Week for 1935.


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# Hiking and Camping Forum

(Continued from page 56)

Skis should be stored where a cool, even temperature exists, such as a cellar. Linseed oil, well rubbed in with a cloth over the running surfaces, will help retain the shape of skis.

On hot days insert two or three newspapers at the rear of your knapsack. They absorb body perspiration and help keep your sandwiches cool, especially if the latter rest against the *front* of the pack.

## Distributing the Trail Traffic

The Randolph Mountain Club exists to aid, enrich and stimulate the life of the summer colony at Randolph, N. H. Visitors are inclined to choose the most frequented paths to beauty spots, while the equally attractive alternative routes are neglected.

A guidebook with an up-to-date supplement is available in the interests of a better distribution of pedestrian traffic. A quarter will secure both publications.

Paid labor keeps open most of the 83 miles of trail. The R. M. C. owns two camps for overnight halts, in conjunction with the Appalachian Mountain Club chain.

The 300 members of the R. M. C. are offered periodic outings—mostly mid-week—and social events. Decidedly novel is the "Rendezvous" hike. A meeting place which can be reached by a number of trails or parts of them, is decided upon. The participants go and return in small groups over different routes of their own selection.

## Choice of Camping Equipment

The information requested by M. M. H. has been sent by mail. Other campers may profit from the advice, so here goes:

*Question:* For sleeping in a tent, which is the most comfortable—a cot or an inflated mattress?

*Answer:* The cot, while taking the sleeper off the ground, is not as comfortable as the air mattress. Once in a great while we hear of air mattresses producing the equivalent of seasickness. It's false economy to buy a cheap air mattress, which is made of adulterated rubber. It does not hold the air for more than two or three years, even by keeping the article cool and away from dry air. Pure rubber type lasts many years.

*Question:* Can high-powered gasoline be used in a gasoline cook stove?

*Answer:* Yes, but *don't* do it. Precautions, no matter how painstaking, are wasted, since the deadly lead fumes steal on one unawares.

## The Season for Expeditions

President L. E. Isaacson of the Wisconsin Outers Association is backing the innovation of an Expedition Committee. H. R. Briggs heads the enterprise, which, to quote Mr. Isaacson, "promises to furnish the spice of the Outers' activities."

Other clubs, too, are planning long-distance overnight trips during the coming months. Many difficulties arise in going outside a club's home terrain. Such treks should be immeasurably more interesting than local ones, to justify the extra time and expense in participation. No use whatsoever, for example, of considering gentle hills if much the same slopes exist close at hand. The exception to the rule is an outstanding scenic attraction—a pretentious waterfall, some semi-perpendicular gorges, curious rock formations or a forest of unusually large trees.

It is not always easy to interest the club's best leaders in scouting such ventures. None but ace guides should be entrusted, as there are transportation, camping and commissary details to be coordinated. A successful expedition has the "spice" to which Mr. Isaacson refers.

## More Camping Trips

Week-end camping trips by one club proved so popular that the big attendances proved their undoing. Transportation and commissary arrangements overtaxed those in charge. Trouble was the trips were scheduled too far apart—one approximately every four months. Smaller, easier-to-handle groups would result from more frequent events, say one monthly. The present informal plan, officially approved, is for small groups to organize private trips when cars are available. It is not wholly satisfactory, as some who would like to go are not invited. A club clearing house for these private trips should help.

## British Rambling Literature

Useful, inexpensive 1935 handbooks for those visiting the British Isles this summer are published by the Scottish Wayfaring Association, 4 Hough St., Falkirk, Scotland; Irish Youth Hostel Association, 6 Fleet St., Dublin; Southern England Ramblers Federation, 7 Buckingham Palace Gardens, London, S. W., 1; South Wales Federation of Rambling Clubs, 1 Ceiriog Close, Penarth, Wales. The cost of each, postage included, is eightpence—about 16 cents.

*Rambles and Scrambles in Borrowdale* is a guidebook dealing with a beautiful section of the English Lake district. Price one shilling (25 cents) from the author, Mrs. E. A. Yates, Grange, Cumberland, England.

*Let's Halt Awhile* is an informal first-person account of a search for cosy, distinctive places to eat and sleep while on walking tours in Kent, Surrey and Sussex. The little book proves that Ashley R. Courtenay found them—and he gives photographs in some instances as added proof. Ashley Courtenay, Ltd., 19 Adam St., London, W. C., 2, will send a copy for a shilling.

A clearing house of British camping information is the Camping Club, 38 Grosvenor Gardens, London, S. W., 1. Publishes a monthly magazine and extends guest-memberships for nominal fees.

British and Irish Free State postage stamps can be purchased from philatelic dealers here.

## A Commissary for One

The undercurrent of a practical mind can be detected in Dr. Myrtle L. Massey's claim that she "lives largely on the scenery when back-packing." Once upon a time Catskill and Adirondack rangers were restless when the energetic lady was in their midst. Today they are convinced the doctor can "bush-wack" without any search parties being conducted on her behalf! When obliged to make camp after a long and strenuous day, the famous Massey "sine qua non" is a bar of milk chocolate.

It is evident the physician goes to the woods and mountains to enjoy herself, and not worry about civilized diets and dieting. Her reactions follow: "Living outdoors 24 hours out of the 24, one can commit all kinds of dietary indiscretions for two weeks and emerge in robust health. Fresh cultivated fruit can be entirely omitted during the wild berry months. Dried vegetables such as lima beans, peas and soup greens seem to furnish most of the necessities."

The simplified Massey menu plan follows: *Breakfast:* Unsweetened cocoa — usually made with malted milk—and cereal with sugar. *Lunch:* Chocolate with nuts or raisins. *Supper:* Bacon, beans, soup, spider bread. For dessert she alternates with rice (to which butter and raisins are added), farina, and corn meal mush with hot syrup (made by cooking sugar). While the doctor never drinks tea at home, she finds it a wonderful pick-me-up when in the mountains.

## Tri-Country Trail

Just to be in the swim the Forum Editor dashed off the above title for the Canada to Mexico footpath. Seriously, though, he would like his western friends to agree on *one* name. At the moment he is partial to the *Pacific Crest Trail,* so christened by Clinton C. Clarke, Vista del Arroyo, Pasadena, Cal., in the new booklet under that name which Clarke sells for 20 cents a copy.

The undertaking reads like child's play in comparison with the private land difficulties of the Appalachian Trail. Not more than 260 miles of the total 2300 miles are outside national parks and forests. What a wonderful break for the hiker—main highways averaging 100 miles apart! However, it has one shortcoming inseparable from a trail routed over major mountain chains—foot travel is confined to but a few months every year.

## A Mexican Welcome

American hikers and campers visiting Mexico receive a cordial welcome from the Club de Exploraciones de Mexico, formed in 1922 by an American, Otis McAllister. The recent invitation hails from Mr. McAllister, who is now secretary of excursions. He may be addressed at Apartado postal 1908, Mexico, D. F. Guests from the Sierra and Wasatch Mountain clubs have been present on some of the outings. Political conditions have not curbed Mexico hiking activity. There are eight sections of the club located in as many cities. A monthly magazine, *La Montana,* is published in Spanish. Regular trips are made Sundays and holidays to snow-covered volcanoes, Aztec ruins, Indian villages, etc. There are no guest fees.

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**91. STORY OF CHEMISTRY** by Floyd L. Darrow
For everyone who wishes to be informed on the most practical of sciences. Coherent, leading logically from the days of the alchemist to the most recent researches, it is entirely free of chemical formulae, equations and mathematical expressions so forbidding to the non-technical reader.

**123. THE JULES VERNE OMNIBUS**
by Jules Verne
Four complete novels, including the best known works of Verne. They have double appeal. On one hand, they rank with the classic adventure stories of Kipling, Henty and Rider Haggard and on the other they are as much a part of everyone's literary background as "Tom Sawyer" or "Treasure Island".

**127. JUNGLE WAYS** by William B. Seabrook
A vivid story of primitive beliefs and ceremonies, of sorcery in the jungle and open cannibalism. A study of native life and customs in the interior of French Africa.

**140. TALES OF LONELY TRAILS** by Zane Grey
Literally tens of millions of readers have been thrilled by the novels of Zane Grey. This is a true account of his trips into the Grand Canyon country and Death Valley. Contains stories of five trips.

**141. TRAILING THE GIANT PANDA**
by Theodore and Kermit Roosevelt
Under the auspices of the Field Museum of Chicago, Theodore and Kermit Roosevelt undertook the expedition detailed in this book to secure a Giant Panda. The story is an extraordinary document of courage and persistence in the dangerous pursuit of one of the rarest animals known to science.

**156. STORY OF CIVILIZATION**
by George A. Dorsey
A panoramic view of man's struggle up from the apes, of his life from the earliest times as a member of organized society.

**J-20. ANDREE'S STORY**
—from Diaries & Journals of S. A. Andree, Niles Strindberg and K. Fraenkel found on White Island 1930
In 1897 a balloon carrying three men sailed away into the arctic regions, hoping to fly over the North Pole. They did not return. In 1930, on a desolate and scarcely visited island in the Polar regions, the crew of the sailing vessel Bratvaag discovered the remains of a camp. The diaries, etc. tell as stirring a tale of courage as history has to offer.

**S-7. PORTRAIT OF A DOG** by Mazo de la Roche
Here is a picture, warm and compelling, of the friendship surpassing love, which exists between dog and master. It will appeal to all lovers of animals. Illustrated with excellent drawings by Morgan Dennis.

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## The Hiker's Guide

Very elemental in treatment is the paper-bound *Hiker's Guide* by Ben Solomon. Practically every hike leader will recognize himself as he reads the advice to save his face when lost. This harmless deceit prevents his charges becoming nervous—or even mutinous.

Solomon advocates the Eskimo art of snow and ice walking, but fails to advise where such Far North instructors are available in the U. S. A. Our author is equally impractical when, to test a frozen lake bed, you are supposed to hurl a stone, weighing not less than ten pounds, as high as you can in the air! What's more, the test is not complete until you have repeated the process in several directions. What hiker knows the poundage "feel" of stones? Maybe the leader is expected to include scales among the multitude of essentials or near-essentials in his pack. Well, it's not an impossibility. One club which conducts *all* its business meetings on hikes—and robust ones in the hills, at that—has a secretary who carries his whole office around with him. The unfeeling jokers contemplate presenting him with a portable typewriter and an adding machine, on the condition they are used only on hikes.

Camping and first aid are also dealt with in the *Hiker's Guide*, a quarter from the Leisure League of America, 30 Rockefeller Plaza, New York, N. Y.

## To Hikers With Overseas Yearnings

Interior of the B. W. I. island of Jamaica is very mountainous. Blue Mountain Peak, 7388 feet, is the highest. Island's mean temperature is 78.8 degrees at 1000 feet, dropping three degrees with each additional 1000 feet altitude.

Miss G. L. Stedman, an Englishwoman, specializes in outfitting and conducting Blue Mountain Peak expeditions from her Kingston headquarters. Her services are often used by tourists with climbing inclinations. There is a guest house six miles from the mountain.

Refreshing frankness in Danish travel advertising: "Denmark has practically no mountains and few very lofty hills. It has beautiful moorland, wooded and pastoral country of the quieter type."

A chain of Youth Hostels girdles the country, the ideal way to explore which is with a bicycle. Forum Editor knows where free literature can be obtained by those interested.

## Premium on Active Members

The Roamer Hiking Club, 15 years old, has liberal guest privileges, most trips being of the "open" kind. However, as a safeguard in confining membership to congenial Los Angeles people, at least three trips must be completed before a guest can apply for membership. The Roamers experience such an active membership that it is limited to 100. Al Crossley is president, and Esther Young, secretary.

Ten cents per trip is the subscription toll on activity in the Back to Nature Hiking Club, Philadelphia, Pa. No other dues are charged.


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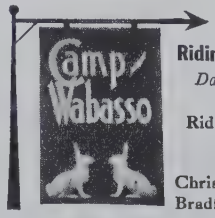


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## Australian Birds

We know little or nothing about Australian publishers but on the evidence we have had we are forced to conclude that Angus and Robertson of Sydney are the leading publishers of Nature books in that country. Two recent volumes from their presses have come to hand and they are equally interesting. One of these is *Bird Wonders of Australia* by A. H. Chisholm. From the frogmouth to the lyre bird, Australia boasts a fascinating and varied avian population, excellent material for such a volume as this and of interest to bird lovers everywhere. The other volume is *An Aviary on the Plains* by Henry G. Lamond, Nature sketches of Australian bird life. These books sell, in Australia, for six shillings each.

## Science Stories

We have already reviewed the first grade reader brought out under the group title of *Science Stories,* and are pleased to record the appearance of the second reader in this group. It is the result of the collaboration of Wilbur L. Beauchamp, Harriet M. Fogg, Gertrude Crampton and William S. Gray. Attractively illustrated in color, this book gives foundation material in the science field combined with a carefully planned reading text. The publishers are Scott, Foresman and Company and the list price is sixty-eight cents.

## How Life Begins

When the small members of the family begin to ask questions about life, its whences and whyfors, these questions must be answered. Many parents still evade the issue out of some silly sense of false modesty, or a feeling of inadequacy in the face of the answer. They are wont to regard this as a task, when, actually, it is a rare privilege to reveal to the young mind the beauty and mystery of life. For those who hesitate in uncertainty George L. Bird has written *How Life Begins.* This book first appeared serially in the magazine *Childhood Interests* and proved so popular and valuable that there was a definite demand for the material between the covers of a book. Setting his story against the fictional background of a happy family, the author, through the parents, introduces the children to the production of new forms among such diverse forms as the yucca, bullfrog, dragonfly, quail, hummingbird, swamp rabbit and otter, telling all of the stories charmingly. The result is a book that will be welcomed by any intelligent parent. It is published by The Book House for Children and sells for $1.10.

## Another Holiday Book

The latest addition to the "Holiday" books is *Holiday Shore,* the work of Edith M. Patch and Carroll Lane Fenton. The Pond, the Meadow and the Hill have been its predecessors. Now Miss Patch and her collaborator come down to the seashore and introduce the younger generation charmingly to the fascinating and varied life of that region. It makes a timely appearance and should be in the travelling library of all youngsters seashore-bound this summer. The publishers are Macmillan and the price is two dollars.

# NATURE IN PRINT

**As a convenience to readers the books reviewed in this department of Nature Magazine may be ordered through the book department of the American Nature Association.**

## Louisiana Wild Flowers

There will be, we anticipate, a considerable demand for *Wild Flowers of Louisiana,* a volume which, so far as we can discover, has no counterpart. This is the work of Caroline Dormon, and in it she has made a notable contribution to botanical literature. Not only has she written and classified the descriptive text, but she has done pictures in color of some 350 herbaceous wild flowers of the region covered. That region includes not only Louisiana but the Gulf States, except for mountainous regions and the sub-tropical parts of Florida. Be it to the everlasting credit of the publishers, Doubleday, Doran and Company, that they have given beautiful reproduction to the color plates and have not stinted in the number thereof. This, of course, accounts for the price of $7.50, but a book like this deserves being done well, and, we feel, readers will be willing to pay the price because it has been done well.

## A Jungle Prince

Artist and writer, Walter J. Wilwerding knows his Africa first-hand, and in *Jangwa* the reader realizes that fact. Here we have the delightful story of a lion cub from its tender baby days to the day when it rules as king of the jungle. We have been privileged to print, in Nature Magazine, some of Mr. Wilwerding's stories, as well as some of his pictures, but it seems to us that this is the best piece of his writing we have seen. In this book we have real animal stories for boys and girls, and for us grown-up boys and girls, as well. You will live the precarious life of Jangwa just as the lion lived and you will enjoy the experience. The publishers are Macmillan and the price of the book $1.75.

## All About Weeds

*Weeds* by W. C. Muenscher is a volume devoted to the needs of anyone interested in the identification or control of weeds common to northern United States. The author is assistant professor of botany at the New York State College of Agriculture at Cornell University, and this volume is something of which he may well be proud. His subject is one of wide ramifications, covering not only native weeds of long standing, but introduced species, some of which have rapidly naturalized themselves. The study of weeds is a fascinating phase of botany, and its economic aspect is important. To anyone interested in weeds from either point of view this book should be indispensable. It is published by the Macmillan Company at six dollars.

## About Our Hawks

It has taken some time for the National Association of Audubon Societies to come out strongly and actively for protection of our hawks and owls, but they have made splendid amends for the delay by making available *The Hawks of North America* by Dr. John B. May. The author's text, which is a guide to the field identification and an analysis of the feeding habits of these unjustly persecuted birds, is supplemented by illustrations in color by Allan Brooks and other illustrations by Roger Tory Peterson. In an introduction Dr. May points out that several species of hawks are in serious danger of extermination and that this is in large measure due to the fact that they have been shot merely because they are hawks, irrespective of the considerable value of the majority of the species as allies of man. Dr. May covers the kites, buzzards, eagles, harriers and falcons as well as the birds popularly classified in the lay mind as hawks. The price of this splendid volume—$1.25—is amazingly low in view of the number of illustrations and the excellent paper and binding given to the book. It must, indeed, be underwritten by the National Association of Audubon Societies, from whom it is available. We wish for it a large sale.

## Poems of Force

In the latest collection of his poems, brought out by Macmillan under the title of *Strange Holiness,* Robert P. Tristram Coffin gives some beautiful and forceful rhymed pictures of Nature and the outdoors. The price is $1.75. We can, perhaps, review this collection in no more effective fashion than to quote one of these poems entitled "The Pheasant":

"A pheasant cock sprang into view,
A living jewel, up he flew.

"His wings laid hold on empty space,
Scorn bulged his eyeballs out with grace.

"He was a hymn from tail to beak
With not a tender note or meek.

"Then the gun let out its thunder,
The bird descended struck with wonder.

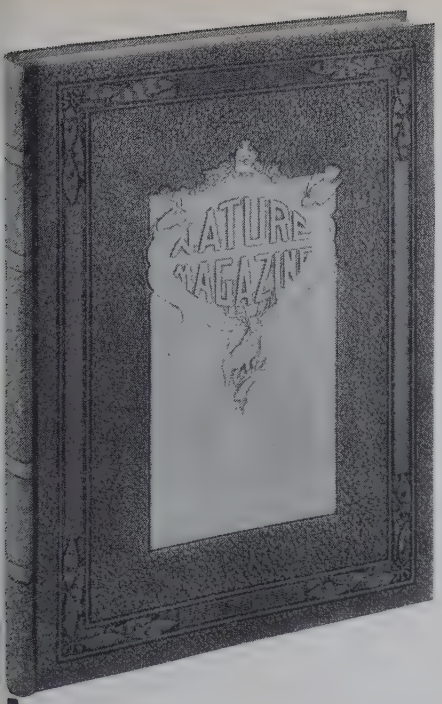
"He ran a little, then, amazed,
Settled with his head upraised.

"The fierceness flowed out of his eyes
And left them meek and large and wise.

"Gentleness relaxed his head,
He lay in jewelled feathers, dead."

## Week End Gardening

How to reconcile a long and busy office day with the urge to have a garden is a most frequent problem, particularly with those who work in large cities and must commute. For these Sterling Patterson has written a most helpful book entitled *Week End Gardening,* suggesting practically how one may garden without turning his regular job into a part time affair. The book is divided into twelve chapters, one for each month. We predict that it will stimulate the sale of garden tools and nursery products in many suburban communities. The publishers are the Macmillan Company and the price is $2.50.

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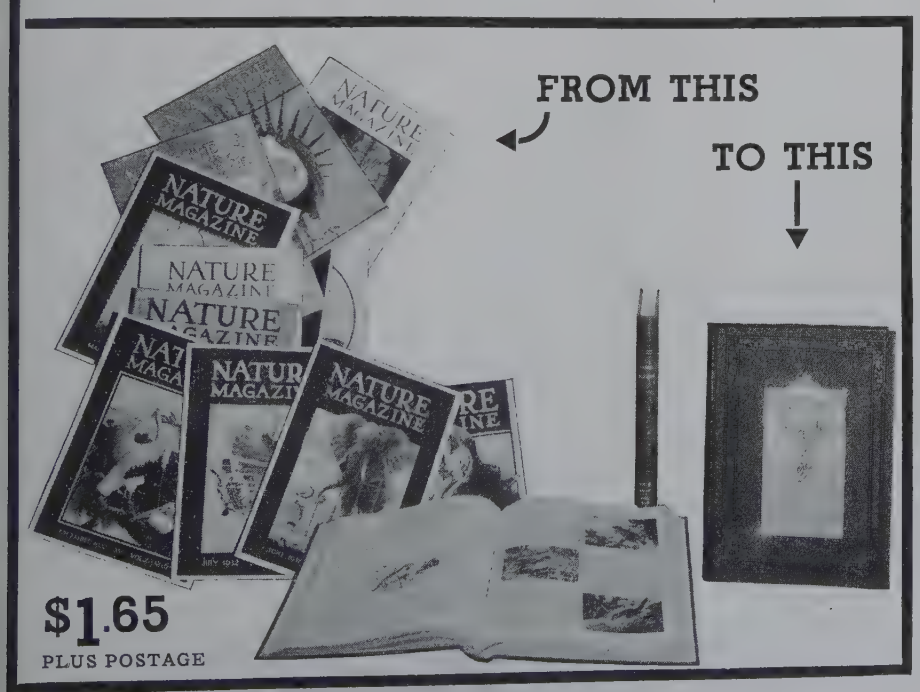


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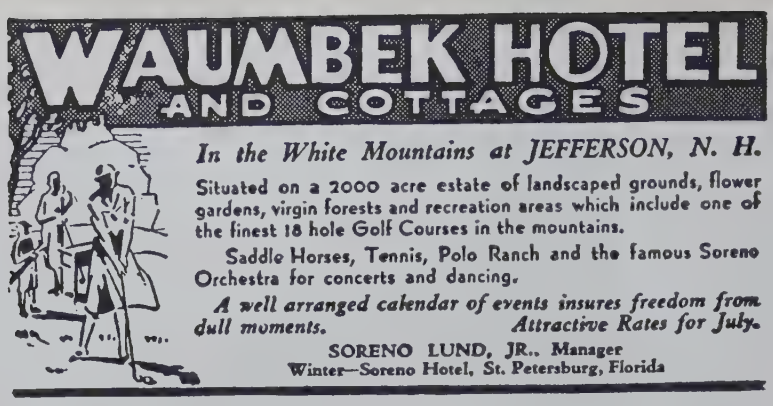
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## Cocker Spaniels

"To Rowcliffe War Dance". With this dedication to a dog Ella B. Moffit tells something of him and a lot about other Cocker Spaniels in her book *The Cocker Spaniel* just published by the Orange Judd Co. $2.50. Carrying more than a hundred illustrations, most of them of cockers, "the dog with the eyes of a woman", the book goes into the history of this gentle fireside companion. If you are deciding on a household pet along about now you might better get this book because it will make up your mind for you and at once and thus save you a lot of time. The book tells you how to take care of this new member of your family and how he will pay you for said care. There are statements by experts and a fascinating chapter on breeding for color.

## We Beg Pardon

In our March Astronomy article we placed Jupiter as rising in Libra at nine in the evening. Since Libra is not visible until eleven it would have been distinctly forward of Jupiter to make such an early appearance. A reader anonymously called this to our attention (we wish he or she had signed the postal card so that we could apologize personally) and we wish to record that Jupiter is not visible until eleven in the evening of March 15. It is no satisfaction to us that *The Observer,* astronomical handbook of the Royal Astronomical Society of Canada made the same error and it proved contagious.

## New Cornell Leaflet

*Made of Earth* is the title of the latest Cornell Rural School Leaflet to come to hand. This is, as is suggested by the title, devoted to the various things made from resources that come from the earth in the State of New York. The mineral resources of that State never were more graphically or, to us, more surprisingly summarized than in this valuable addition to the already distinguished series of leaflets.

## For Dog Lovers

Keeping abreast of developments and taking advantage of suggestions inspired by the first edition, C. E. Harbison has brought out a new and enlarged edition of *Our Dogs.* Containing valuable material on the selection, care, breeding and training of dogs, this volume is welcomed by dog lovers everywhere. It is published by Orange Judd and sells for $2.50.

## Down to Earth

*Truly Rural* is the title Richardson Wright gives to his book published some time ago and now brought out in a new edition embellished by colored illustrations. The volume is subtitled "Adventures in Getting Back to Earth" and, as this suggests, is a collection of essays on just that. The publishers are the J. B. Lippincott Company and the price is $2.50.

## Hornets as Fly Catchers

By Julian G. Patrick

In August, 1934, our family, consisting of two children, Mary, fourteen, Richard, ten, Mrs. Patrick, myself and Terry, the fox terrier, set up our tents for a ten days' stay at Stump's Eddy on the South Branch of the Potomac River. It was an almost ideal camp site in a black walnut grove, with the grass-covered ground sloping gently toward the river, where the black bass were found by the "lucky", and the water was smooth enough for canoeing, and of varying depths for any kind of bathing.

Cattle grazed within sight of our camp and we, therefore, had expected to be annoyed with the alert, hard-biting flies. Hence, all precautions were taken to protect the food and ourselves from these pests with enough mosquito netting, insecticides and swatters.

Arriving there in the late afternoon we had decided after the umbrella tents had been erected to risk eating our first meal on the big camp table sans any mosquito netting, and learn if the flies were of the sociable type. A few flies arrived in time to greet the first food opened, and we all expected to have a slapping and shooing good time during this first meal.

But we had hardly started eating when, like a scouting aeroplane, a bald-face hornet (the social wasp—those who build paper nests) darted back and forth across the table. He flew just low enough, as though he was making quick observations or trying to scare an "enemy". The experiences of some of us with a hornet had been somewhat painful for we had accidentally collided with one in flight, and besides receiving a blow like a pebble from a slingshot had acquired a rather lasting impression. After much discussion and dodging we diners decided to let the visitor alone. The hornet then quickly disappeared and within a few moments returned with about six friends. At this sight, our first impulse was to run and let them take possession of the table, but later thought best to show our bravery and remain there. For a few minutes we ate little food, wondering where each hornet would select a landing place.

The suspense was broken by Mary calling, "Look, that hornet picked up a fly in his legs and flew away with it!" We watched another hornet, and he soon grabbed a fly with his tong-like legs and carried it off. This performance was repeated about every 15 seconds for the duration of the meal. Our appetites were returning, we were again enjoying the meal. Strange to say, by the end of the period, probably twenty-five minutes, there was not a fly in sight, but the hornets kept flying about the table, apparently ready if a fly did appear.

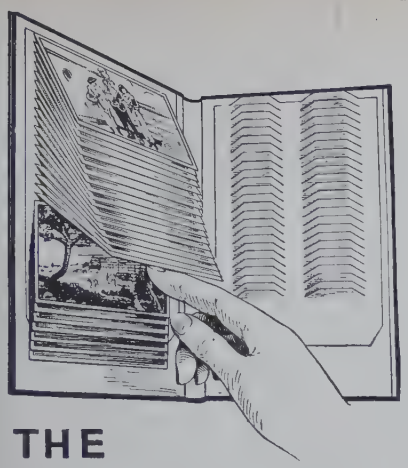
None of us claimed to be authorities on the habits and dispositions of hornets, but we concluded after this first meal, they were going to be our friends. They arrived at each succeeding meal, and, like policemen, quickly grabbed any of the "robber" flies and removed them. Furthermore, they became friendly enough to pick a fly from one's bare arm, an act accomplished practically without a "tickle". They were allowed the freedom of the table, and would not touch open food if a fly was in sight. No effort was made to play with them, because it was more comfortable to remain nonchalant, as any misjudgment might have been disastrous. The fox terrier even became accustomed to having them around. One breakfast a hornet missed a fly on the edge of a dish of hot grease and fell into it. He was burned so badly he died. We were sorry about his demise; Mary shed a tear for the loss of a pet.

These bees were so efficient with their fly-catching that thoughts of enclosing the table with the mosquito netting were forgotten. The fly nuisance at meal time was actually eliminated. The hornets were also given credit for the absence of mosquitoes, too. Visitors to the camp were always skeptical about our "helpers" until they joined us in a meal and made their own convincing observations.

All of us were curious to know how the hornet disposed of the fly as he hurried away, but no one was fast enough to follow him far. We were rewarded the last day, however, while breaking camp, by seeing a hornet hanging head downward on the edge of the canvas tent porch, holding by one hind leg, and turning over with the other five legs, like an ear of corn on the cob, a headless and wingless fly, which was consumed within about 16 seconds, by the watch. He permitted us to come within a foot of him so that very close observation was made.

The decision was unanimous that we had learned a new lesson in Nature. This time one creature devours another for food. And the wicked-looking hornet is not the belligerent fellow we have always considered him.

We have camped in sections of the country where only an occasional fly would be seen, for instance, the Adirondack Mountains of New York, especially at Lake George, but this was the first time we had a squad of hornets keep the flies from our camp table.



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## CRATER LAKE

(Continued from page 24)

Llao's followers. When Skell's heart was in mid-air on one of its many tossings back and forth, Antelope, Skell's trusted friend, seized it, and with the swiftness of a lightning stroke, rushed to his master's body. Skell, of course, regained consciousness as soon as his heart was replaced. With great roarings, he swore he would rid the world of that no-account scoundrel, Llao, before the sun set that day. But it was only after hours of continuous searching, that Skell found his enemy asleep in a cave. He hacked off his head and then, to further appease his anger, he cut the body into small pieces. Looking about him, he spied Llao's companions again gathering on the flat top of the large rock. Skell cautiously approached the edge of the rocky precipice. Hiding behind a huge boulder, one by one he threw the pieces of their master's body to them. Thinking that the chunks of flesh were Skell's body, they devoured them with relish. But when Llao's head, which had been saved to the last, was thrown to them, they realized their error. With wailings that reverberated through the valleys and mountain ranges, the monsters sank below the surface of the lake, leaving their master's gory head floating on the water. Komookumps, looking down to earth from his spirit-world heaven, saw the unsightly object. He turned Llao's head into Wizard Island as a lesson to other quarreling spirits. Today, when the thunder rolls over the mountains, the Klamath Indians say that it is Llao's followers mourning his grewsome death.

The Indians undoubtedly built this superstition and the numerous others which clothe this entire territory around the strange sense of awe which fills all visitors to Crater Lake. It is not only an admiration and respect for Nature's stupendous forces, but a mystical force that evades explanation or analysis.

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## The Watchers Watched

By James E. Cook

The club house and rendezvous of the Nature Study Club of Indiana is located in a tract of primeval forest, bordered by a fair sized stream. The custodian of the tract, Mr. Lawrence Allison, is not only a lover of Nature but a keen and accurate observer. He lives in a snug cottage overlooking the stream and enjoys a unique opportunity for spying on the private lives of his forest neighbors. Many are the interesting tales he has to tell of dramatic incidents in the lives of the wild folk, which he has been privileged to witness. A recent episode observed by him seems worthy of being broadcast. We report it in essentially his own words.

"Early one morning," said Mr. Allison, "while observing a stately blue heron standing in the edge of the stream, patiently watching and waiting for a blue gill or a sucker to swim within range of his 'harpoon', my attention was attracted to a stealthy movement in the edge of the weeds near the shore. Shortly the dusky form of a mink became visible, as he cautiously crept toward the heron, obviously intending to make it his prey. Returning my gaze to the heron, and pondering whether to interfere to save him


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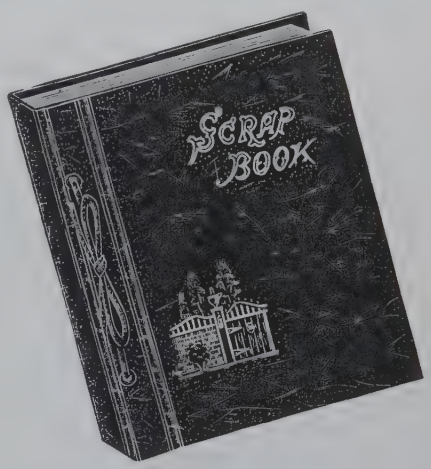


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from impending fate, I noted that he seemed poising his sharp beak for a thrust at his quarry in the water. Just at this instant, like a meteor from the sky, an object which left a blue streak as it darted from an overhanging limb, struck the water almost under the startled heron's nose and emerged as a king-fisher with the heron's quarry gripped in its beak.

"With a disgusted croak, Mr. Heron spread his huge sails and flapped away to another pool while Mr. Mink slunk back into the underbrush."

### Flight of Wild Geese

By W. E. Tharp

Last night I heard the honking of the wild geese as they passed over our town. As their coarse, uneasy calls came down through the cold and darkness my heart was touched with pity for these poor creatures of the wilds. On this long flight from some far northern lake to the southern waters few are the places where they may alight in safety. They must cross hundreds of miles of populous country where almost every man and boy is a potential enemy. The perils the primitive wilderness held have been succeeded by the far more deadly ones of civilization. With what fear and apprehension will these lone migrants scan the inhospitable fields by day, and look down on the dread lights by night. There will be supreme weariness of wing, and sore faintness of body, as the long flight is sustained o'er the wide areas that offer them little else than extreme danger. When I see the slow moving files of the wild geese far up against the dull November sky, or hear their encouraging calls to one another in the darkness of night, the old hunting instinct is lost in sympathy. I should rather befriend than harm them. I wish they could be welcomed along the way with more places of rest, more havens of safety.


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# Photographic Notes

BY SAMUEL BROWN

The photographic section of NATURE MAGAZINE is designed to be of service to its readers interested in photography, in particular Nature photography. All are invited to submit any problems or questions, which will be handled with dispatch. Any suggestions with respect to the conduct of this department will be welcomed by the editor.

"A RARE SIGHT IN NEW YORK". A PICTURE BY ALAJOS SCHUSZLER SELECTED BY COL. EDWARD STEICHEN FOR FIRST PRIZE IN THE ROLLEIFLEX SALON RECENTLY SUCCESSFULLY CONDUCTED BY BURLEIGH BROOKS

## Campfire Pictures

During the next few months, many of us are going to undertake overnight hikes. A picture of the group around the campfire is pleasing and out of the ordinary. The only equipment necessary, in addition to the camera, is a flash bulb and holder.

Everyone should be grouped as close to the fire as comfort will permit. Be sure that you can see everyone in the finder. To be certain that everyone is included, have the persons at the extreme ends hold up lit matches. If you can see these in the finder then the picture is ready to be taken.

It is best to have a moderate fire; not too bright, nor yet allow it to die down to embers.

Rest the camera on a tripod or other firm support. Set the lens at F. 8 (U. S. 4), open the shutter, set off the flash and close the shutter immediately. Hold the flash a little to one side and slightly behind the camera to prevent fogging the film. Another precaution to be observed is to place the camera where the smoke will blow away from and not towards the lens or between it and the subjects.

Box cameras will take excellent campfire pictures at night but be sure to have the largest stop in place.

## Water

Bodies of water, at this time, appear unusually interesting. The sea with its rocks and waves and many aspects from calm to tempest; the braided surface of a stream; the lake, calm and mirrorlike and presenting a variety of interesting views from different points; the waterfall with its dizzy height and crushing fall in a mass of foam and spray, are subjects of which pictures are desirable.

Pictures of water are usually taken with a longer exposure than ordinary shots. Short exposures give a frozen-like effect to the water. Longer exposures give a natural effect with a feeling of movement. The fastest recommended shutter speed is $\frac{1}{25}$ of a second but not more than $\frac{1}{10}$ of a second. The stop must be adjusted to the amount of light present, depending on various conditions.

Perfect reflections on a body of calm water are interesting and generally appealing. Sometimes, however, the artistic effect is enhanced if ripples are present.

GROUP AT A CAMPFIRE. TAKEN WITH THE AID OF ONE FLASH BULB, CAMERA SET AT STOP F.8

## Lens Types

Recently, inquiries concerning lenses have been more frequent than at any other time. Amateur photographers have begun to realize the importance of this part of their equipment and the care necessary in its choice. In order to dispel any mystery as to the types of lenses and their representative advantages, we are classifying them in the order of their importance and usefulness.

The most inexpensive box cameras have meniscus lenses, so called because they are crescent shaped. This is the simplest form of lens because it is made of a single piece of glass. Such a lens can only be used in a fixed focus camera where the manufacturer has placed it in the correct position to form a sharp image.

Meniscus lenses cannot bring images of different colors to the same point of focus. It was discovered that by combining two different kinds of glass it would be possible to bring all the colors to the same point of focus. As these two pieces of glass are cemented together the combination is still commonly, although in a sense mistakenly, called a "single" lens. This lens is fitted to most single lens folding cameras and is called a meniscus achromatic lens because it is corrected for color.

Single lenses have the undesirable property of producing curvature of straight lines at the edge of the picture. This matters little or not at all in landscape or portrait work;

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but when an object having straight lines is photographed, the curvature is objectionable. If the stop is in front of the lens this curvature is outwards; if in the back the curvature is towards the inside. This distortion is called "spherical aberration." By combining two meniscus achromatic lenses with a stop between, the distortion of one is offset by that of the other resulting in no curvature at all. This combination is called a rapid rectilinear lens and is corrected for curvature and color.

REFLECTION. TAKEN ON VERICHROME FILM, F.11, 1/25 OF A SECOND

Images used in photography must be formed on a flat plane but meniscus lenses tend to project images that are saucer shaped. These lenses are astigmatic. By the use of new glasses, opticians have been able to produce lenses projecting sharp images over a flat field. These are anastigmats or not astigmatic. They have largely replaced the rapid rectilinear lenses. Anastigmats are the finest lenses made as they are corrected for the most objectionable faults encountered in photography. Cameras fitted with these lenses will give sharper and more correct images than any others.

(This is the second in a series of short discussions on the technical side of photography. Another one next month.)

## "Trade Hints"

"Picture Taking At Night"—32 pages giving instructions on how to take portraits by artificial light, how to photograph lightning and silhouettes, pictures by moonlight and flashlight, outdoors at night, fireworks and much more. Not many, so send a 3 cent *stamp* for your copy *now*.

*Leica* owners attention. Dufaycolor cartridges are now being put up for the Leica camera. Write for circular describing the film and processing instructions.

Some new sets for toning, dyeing and coloring finished prints has just been tried and the results are beautiful! Catalogue describing these and a full line of photographic chemicals is available from this department.

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(Continued on page 69)

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## Cherry Pie?

By Lois M. Landis

King Solomon's words of wisdom regarding the ant might well be applied to the chipmunk, for he too "Provideth his meat in the summer, and gathereth his food in the harvest". It was this display of Chippy Chipmunk's ambition that first brought him to our attention. Chippy was a delightful little creature with his bushy tail, his gorgeous stripes and his tiny ears, which were constantly on the alert. He had been a frequent visitor to our back lawn on previous occasions during the summer, always paying strict attention to his own affairs, and assuming that we would do likewise.

We did not realize, however, just what an industrious citizen Chippy really was until one day during the first week in June. We had finished seeding cherries one evening rather late, and not wishing to dispose of the seeds immediately, had placed them in a large pan on the back walk.

Early the next morning, Mr. Chippy came scampering across the grass, and, after carefully observing his surroundings from the shelter of a clump of forsythia, climbed on the edge of the pan. We were eager to learn just what his plans were, and a few moments of quiet observation greatly rewarded us.

The worm-infested cherries were scratched to one side. Then, as carefully as if he were grading them for a canning factory, Chippy selected the nicest-looking seeds for his own consideration. He picked up the seeds in his tiny, dexterous paws, held them up to his mouth and proceeded to bite off every little particle of cherry that might have remained, turning them over and over again.

After several minutes of this, we suddenly concluded that our Chipmunk was developing a terrible case of mumps. Chippy's jaws swelled and swelled! Then, quite suddenly, he ran over the edge of the pan, down the terrace and through his own doorway.

By this time we were as interested in our little neighbor as we were in the cherries, wondering what the Little Bit of Ambition was up to. Just then he appeared, and lo—the mumps were gone!

Chippy continued this procedure for two days, working from dawn until dusk. We counted the seeds he stored away in his "pockets" to convey to his pantry cupboard, and found that he would carry as many as forty-two at one time. He become so tame that our frequent trips past the pan did not disturb him in the least. We would hear him severely scolding a bluejay occasionally, when Mr. Jay's curiosity got the better of him, and he tried to examine the contents of the pan.

Needless to say, it was the least of our wishes to remove the pan of seeds while Chippy was busy helping himself to his winter's supply of food. And now, as we enjoy our favorite dessert, we wonder, "Is Chippy having cherry pie too?"

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## Birds and Window Panes

By Richard Weaver

Editors seem to think there is nothing unusual about a dog biting a man, but when a report comes in that a man has bitten a dog, they regard it as real news. So, when a man boxes his shadow it is not particularly exciting, but when a bird boxes his shadow and never seems to tire of it, our interest is aroused.

Spring brings numerous reports of birds trying to fly through window-panes. Many people are alarmed by these visitors knocking against the glass and fear for the birds' lives. Conservative individuals even regard these feathered intruders in the light of a nuisance.

Fantastic reasons for this window-crashing habit of birds are often advanced, but ornithologists—people who study birds scientifically—in explaining it offer a logical theory which holds interesting conclusions.

The bird—generally a male—sees its reflection in the pane of glass; imagines this is another bird; tries to drive the intruder away. This with the idea of ruling as master over the particular area he has selected for a home. The female, mildly concerned in the outcome of the attack, can often be seen placidly feeding under nearby bushes, admiring her prospective husband from this vantage point. The male, only interrupting his tilts with the imaginary opponent in the window to burst into occasional song, or preen his feathers, seems tireless in this quite useless combat. He rarely takes time even to feed, and continues until the sun, disappearing below the horizon, removes his still undefeated enemy in the window-glass from his line of vision. The truce, however, lasts only until another rising sun brings the warriors together again.

Recently, a male cardinal was observed waging an imaginary window battle for several days at the Maumee Valley Country Day School in Toledo. The entire student body witnessed the first rounds of the fight, which started early one morning and lasted all day. Pictures were taken at close range, and most of the children were able to stand only three feet away and witness the whole performance.

The bird first attacked the auditorium windows, and flew into the room when a sympathetic onlooker opened one of the sashes. Later, flying out again, he discovered a fresh enemy in the windows of the Science Room as the sun traveled west, and here he carried on until dark.

Soon the mating season will be over and Mr. Cardinal, absorbed in the duties of fatherhood, will abandon his useless warfare in favor of the more pressing task of food-getting. Some birds have been known, however, to keep up this window fighting for the entire nesting season. Death occasionally ensues from these rushes, but usually it is only the bird's pride that gets seriously hurt.

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## Preserving Green Larvae

By John Bliese

Insect season is coming soon and collectors are, no doubt, again bemoaning the fact that they will have to preserve green larvae in solutions in which they will lose all color. Several years ago I thought of placing these larvae in a solution which is on the market to preserve algae. The green color remained practically unchanged, but the "worms" shriveled. Evidently the osmotic concentration of the solution was too strong. After some experimentation, however, I discovered a solution that does not affect the insect and keeps the color quite well.

The solution consists of 12 cubic centimeters of copper sulphate solution made by dissolving four grams of copper sulphate in 13 cubic centimeters of water; 6 cubic centimeters of ten percent glacial acetic acid; 36 cubic centimeters of ten per cent formaldehyde. This suffices for a number of larvae, depending on their size.

While the color of the specimens changes very little, the solution itself is colored. However this is better than the old fashioned preservatives and the color can be controlled by varying the amount of copper sulphate.

In preserving green algae, the copper in the solution replaces the magnesium of the unstable chlorophyl to form a more stable compound. Since the same solution works for both plant and animal specimens, it may not be too farfetched to suggest that a similar reaction may occur in insects, and that green coloring matter in certain larvae is closely related to chlorophyl or leaf green.

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## Nature Lectures

William L. Finley, field naturalist and conservationist of the American Nature Association and noted wildlife photographer and lecturer, will be in the east next January and February with his two famous motion picture lectures—"Where Rolls the Oregon" and "Birds, Bergs and Kodiak Bears". At the end of Mr. Finley's last lecture tour he showed his pictures at a private showing requested by the President of the United States. Data relative to his forthcoming lecture tour and information relative to dates may be obtained from William L. Finley, Route 10, Portland, Oregon.

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## Bird Home Life

Francis Hobart Herrick has devoted a lifetime to the study and photographing of wild birds, in the process accumulating uncounted notes and negatives. We know him perhaps best for his outstanding studies of the American eagle and his splendid biography of Audubon, but in his latest book, *Wild Birds at Home,* we find a volume overflowing with a wealth of information, fascinatingly told, about our typical American birds. Drawing upon his large file of bird negatives, Dr. Herrick has illustrated this book with some of his finest pictures. This is a volume that every bird lover must inevitably covet, and it is equally interesting to the layman who knows comparatively little about birds from the scientific point of view. It is published by D. Appleton-Century Company at four dollars.

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## Aid to Gardeners

*The Gardener's How Book* should prove a valuable help to many a puzzled gardener in doubt as to what to do under any one of the many situations that may arise in the garden, and how to do it. This is the work of Chesla C. Sherlock, who was for five years the editor of *Better Homes and Gardens.* In compiling this book he has drawn upon the thousands of requests for advice that were made of him. He has selected those points that seem of the widest universal value and made a most useful volume. The publishers are the Macmillan Company and the price is $3.50.

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(Continued from page 67)

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All who have any photographic problems or difficulties are invited to correspond with this writer, who will give his personal and prompt attention to each inquiry. Prints and negatives will also be criticised for anyone who will write the department editor. We wish all of our readers to take advantage of this service.

Cordially,
Samuel Brown

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### Award for Pictures

In the May issue of NATURE MAGAZINE we offered our readers an opportunity to collaborate in providing material for our Rotogravure Section. There was a ready response and a number of outstanding pictures submitted. These will be reproduced in sections appearing in the issues from October to January.

Since these Rotogravure Sections are printed four issues at one time and since there is a great deal of mechanical work involved in their production, the last date when pictures for one set of four sections must be received is considerably in advance of publication. The date for the October to January issues is now past. However, photographs may now be submitted for the sections of February to May inclusive of next year. These photographs will be received up to November 1, 1935.

From these pictures we will select one picture for each issue as "The Nature Picture of the Month", making an award of twenty-five dollars to the author. Other pictures regarded as of sufficient natural history or photographic interest will be purchased at three dollars a photograph.

All pictures submitted should be accompanied by the name and address of the photographer; the date and place taken; identification of the subject; the name and type of camera and film used. The pictures should be Nature pictures—birds, animals, flowers, insects, fishes, etc. We are not particularly interested in purely scenic pictures. The best criterion is the type of picture reproduced in past Rotogravure Sections. A size of at least five by seven is desirable in each print. No unusable pictures will be returned unless they are accompanied by return postage. Receipt of the pictures will not be acknowledged unless a special request is made and return envelope or post card provided for the purpose. We cannot be responsible for photographs lost or damaged in the mails.

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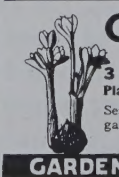

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# In August

"SUMMER reveals the maturity of all creation," wrote Edward A. Preble in expressing the Nature lover's own good reasons for finding all the seasons "successively absorbing," and it does sometimes seem necessary to seek a philosophical basis for taking special delight in August. Yet Charles Lamb wrote charmingly of this hot month, as a time of vitality. "In a genial August noon, beneath a sweltering sky, death," he declared, "is almost problematical. At those times do such poor snakes as myself enjoy an immortality. Then we expand and burgeon. Then are we as strong again, as valiant again, as wise again, and a great deal taller."

There is possibly ironic significance, however, in the fact that Lamb's praise of August is in his essay on "New Year's Eve", and most men are eager to forego expanding and burgeoning beneath a sweltering sky.

Two escapes—the mountains and the sea (height and expanse, grandeur and sublimity)—comprise the choice Nature offers in August to weary men. Only, in fact, as an escape does the sea pertain to August in any peculiar sense, for the ocean is without season—in motion constantly and ebbing and flowing, but according to its own rhythm in endless time and without the definite seasons known on the land—yet August is the most welcome time to seek the shore. Fortunate are those who can hear the message that comes on a visit to the sea. Byron exulted in the thought that man's "control stops with the shore"; and the Psalmist sang: "They that go down to the sea in ships, that do business in great waters; these see the works of the Lord, and His wonders in the deep."

And another Psalm sings of the strength that is in mountains: "I will lift up mine eyes unto the hills, from whence cometh my help." As the endless motion of the sea speaks of the eternity of the universe, so the solidity of the mountains seems to tell of the earth's endurance. And it is welcome in August to have recourse to the mountains, to climb toward the sky and yet to go backwards as it were in the season of growth and find flowers that weeks ago one thought had gone for another year. The summit reached, and the face of the climber cooled by the mountain air, his eyes amazed, and his ears delighted with the thin clear song of birds, the mind thinks easily with Henry Timrod:

> At last beloved Nature! I have met
> Thee face to face upon thy breezy hills.

As one climbs toward the sky in the middle of August, his thoughts may also turn to Nature's message of vastness that is spoken by the heavens, and he may remember that it is the time for the meteors in the constellation Perseus—the Perseids. Frank Bolles, on August 10, 1891, counted two hundred and fifty meteors between sunset and eleven o'clock, and rich indeed would be the fortune of any who could spend a night on the summit of a mountain, as he did during another August on Mount Chocorua in New Hampshire—combining in his experience, with amazing appropriateness, mountains and night and meteors and thunderstorm.

August is indeed the month when most pleasantly one thinks of ocean and mountains and night, but escapes may not be feasible much beyond our own suburbs; and, if not, the true Nature lover will most assuredly find that the month's evidences of life's fulness are absorbing and satisfying, even at hand. Such are the broad, pink, clustered flowers of the swamp rose mallow growing on their tall and canelike stems, the "greatest effort of the season to adorn the August days." In moist fields and meadows and bordering pastures and back roads, the purple gerardias contribute to August flora a "daintiness of form, perfection of color, and gracefulness of habit," that led Bradford Torrey to say "it would be impossible to praise them too highly." The Joe Pye weed lifts a substantial stem, also of purple, three to ten feet above the moist soil of woods or stream banks and displays a democratic abundance of pink to purple clusters. A deeper shade is in the brownish purple flowers of the groundnut or wild bean, a whitish purple or lilac in the bracts of the wild bergamot on dry hills, and a deep shade in the purple bergamot. But the month is not entirely purple. Turtlehead in wet places, Queen Anne's lace and pearly everlasting in fields and meadows, and the sundew in bogs and sphagnous places add white to the month's colors; the goldenrods are plentiful; the oswego-tea flowers are blazes of red and scarlet; and the New England asters with their violet-purple ray flowers, seeming almost a shade of blue, add a sense of completeness to the month's colors in blooms.

The flowers of earlier months have become fruit in August—elderberries, chokecherries, early apples, hawthorn, and almost unnoticed the red cluster of seeds that follows the jack-in-the-pulpit. The down of the Canada thistle has begun to fly; Thoreau noticed a goldfinch upon it on the 14th of August one year. Cicadas, katydids, and crickets are busy with their instruments, without which an August day would lack the incessant vibratings that have become a part of our recollections of the season.

Regarding the birds, "these," as Thoreau said, "might be called the pewee days," though definite recognition should also be given to the red-eyed vireo, that other dauntless tree singer of the hot summer days, when most of our birds are molting in silence. The whistle of migrant upland plovers may be heard, and also with good fortune the *kee-you kee-you* of the red-shouldered hawk. Burroughs, in fact, concluded that "August is the month of the high-sailing hawks." Certainly one of the memorable experiences of August days is brought to the ears and eyes by the amazing booming swoop of the nighthawk, that bird that is no hawk but bears well its misnomer in the heavens at dusk.

By HOWARD ZAHNISER.

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## "OH, PADDLETAILED ALLAH, PLEASE HOLD OFF THE WINTER!"

So this beaver youth seems to pray. The ice, now two inches thick, has been kept open for hauling. Soon the beavers will be locked in their house and under the pond for the winter